SCM Management Software User Manual

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Overview

SCM Management software is the main software of control terminal of embedded multi-viewer products, responsible for design of layout, management of layout resources and interaction with resources in multi-viewer chassis and so on. It is capable for flexible layout design by use of user interface operation, and can be connected with multi-viewer chassis via network to perform real-time interaction for layout resources, control message, control command and so forth.

1 Introduction

1.1 Software Components

The embedded multi-viewer software can be classified into device terminal software and control terminal software by deployment location. The former is installed in Linux OS of multi-viewer chassis, and the later one is installed in remote control terminal (such as laptop, workstations in LAN), mainly used for layout design, templates management, resource scheduling and device control.

Moreover, the multi-viewer chassis supports monitor and control based on SNMP protocol. can provide complete MIB files and development interfaces which used for integration with third party monitor and control system.

1-1 Multi-viewer Products Software System

1.2 Terminology

1) **Physical screen**: the video terminal (LCD screen, LCD monitor) which connected with HDMI (or HD-SDI) outputs of multi-viewer chassis is known as physical screen. one multi-viewer chassis can provide up to 4 independent HDMI outputs, and also provides 4 HD-SDI signals used for monitoring. Different physical screens for different output interfaces. the maximum length of HDMI transmission is 30m, and the maximum length of

HD-SDI transmission is 100m.

2) **Logical screen**: in customer's view, the contents displayed on multiple screens may be logical relevance, for example, one physical screen is used for display top half of video, and another screen is used for display bottom half of video. Or one physical screen is used for display left half of video, and another screen is used for display right half of video. These related physical screens displayed by defined layout are considered as logically related. These logically related physical screens can be seen as a big screen composed of multiple screens, and this big screen is defined as **logical screen**.

3) **Screen combination**: 4 physical screens can be jointed to 1-4 logical screens, the condition of jointing 4 screens to any one type of logical screen is known as **screen combination**

4) **Layout template**: For one screen combination, the preset layout prepared for each logical screen is called **layout template**. There are two kinds of information included in layout template: screen combination information and layout information for each logical screen.

5) **Screen template**: the layout which designed for logical screen with specific resolution is called screen template. for example, choose one screen combination

according to user requirement, includes 3840x1080 resolution and 1920x2160 resolution. Please notice the saved screen template can only be used in those logical screens which have identical resolution with this screen template, for example, the screen template with 3840x1080 resolution can be used in

but cannot used in

, the reason for it is the resolution of later one is 3840x2160, it is different with resolution of screen template.

Above is using rules about layout template and screen template. In addition, SCM management supports "customized" display element composed of a group of elements, the locations of every elements are defined, and can be saved in toolbox as an individual

element to use.

6) **Display elements:** The objects used for design layouts are **display elements**, including video, audio meter, UMD, Tally light, video background, analog clock, digital clock, date, text frame, alarm frame, metadata, image and so on.

7) **Device interfaces**: each multi-viewer chassis can contain 4 I/O modules, each module has 5 BNC ports, 1 HDMI/I port, 1 HDMI/O port, and 1 AUD/GPIO port, all ports like these are called **device interfaces**.

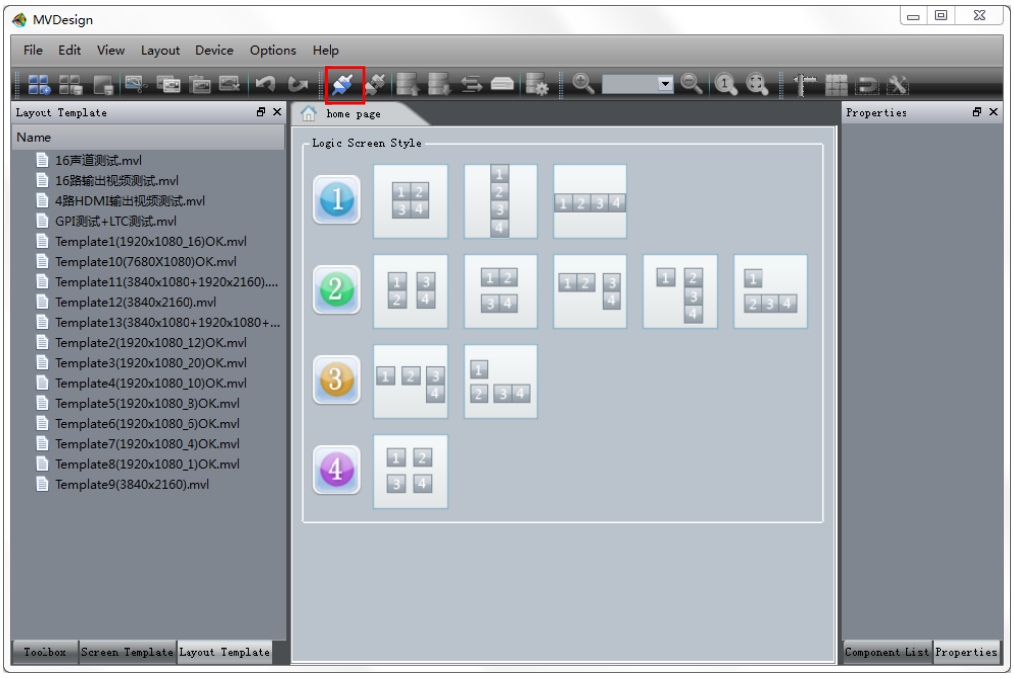
8) **Synchronization**: the process which upload layouts designed in control terminal software to device terminal and use them in device terminal.

9) **Resource files**: those image files, audio files, video files which will be used in layout templates are called **resource files**

Details user should notice when design layouts: each module just can support up to 6 different scaler, one signal source can support up to 6 different sizes videos.

1.3 User Interface Layout

1. Run SCM Management software to enter main user interface.



2. Press to pop-up login window.

3. In login window, the meaning of relative parameters are depicted as following:

『IP Address』: Input IP address of connecting multi-viewer chassis, for example: 127.0.0.254. SCM Management software, as control terminal software, will connect various Fresco chassis according to IP address. IP will be saved after input one time, users just need to click and choose a IP from drop down list when connect same chassis.

『Password』: The default password of Fresco is "admin", users can modify it when first time login.

『Save Information』: If this option is checked, IP address will be saved after first time input, users just need to click and choose a IP from drop down list when connect same chassis.

『Remember Password』: If this option is checked, the system will remember corresponding password. when next time login, users just need to input IP while do not need to input password again.

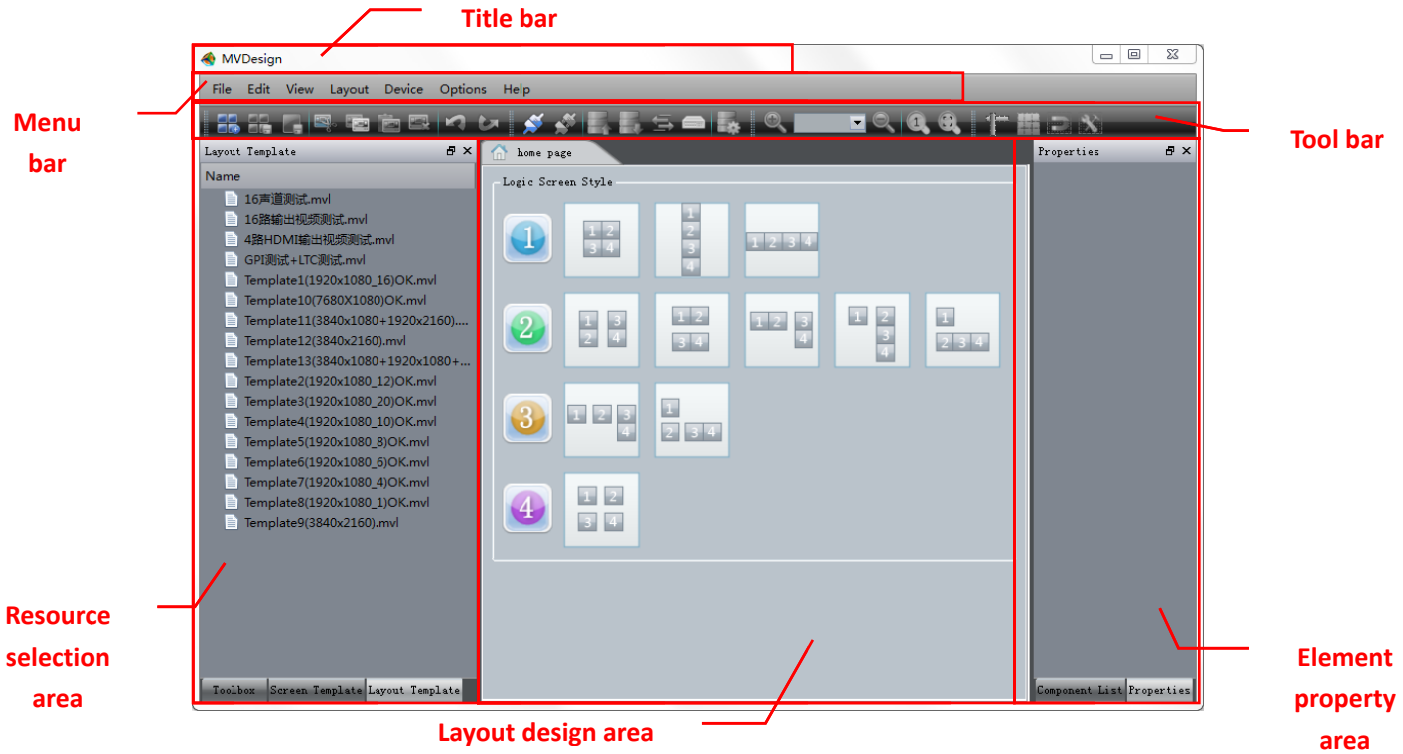
: Clear the record: if click this button, all IP addresses and passwords saved in system will be deleted.

After input IP and password, click "Login" button, system will prompt "Login successful!" if they are valid. Software will run normal after login, users can modify default IP address and password.

If input IP is invalid, the system will prompt "Connect server failed!". If input

password is invalid, the system will prompt "Login failed!"

There are 6 parts in SCM Management software user interface: upside, from highest to lower are, title bar, menu bar, tool bar; downside, from left to right are, resource selection area (include layout template, screen template, tool box), layout design area, element property area (include property and element list).



Next introduce details in order.

2 Title Bar

Title bar shows the currently editing layout name, as following picture. current layout is 4.mvl.

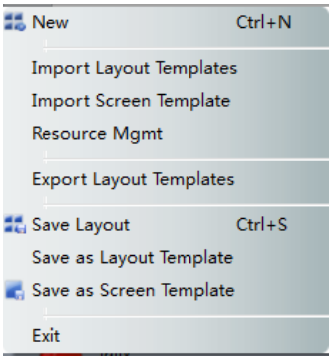
When new a layout template, the system will give name to new template in the order of layout1.mvl, layout2.mvl, layout3.mvl... ...

3 Menu bar

Menu bar includes "File", "Edit", "View", "Layout", "Device", "Options" and "Help".

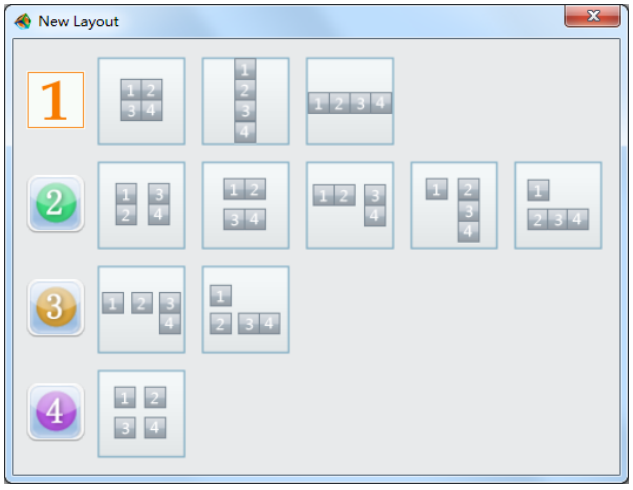
3.1 【File】Menu Instruction

There are following options in "File" menu:



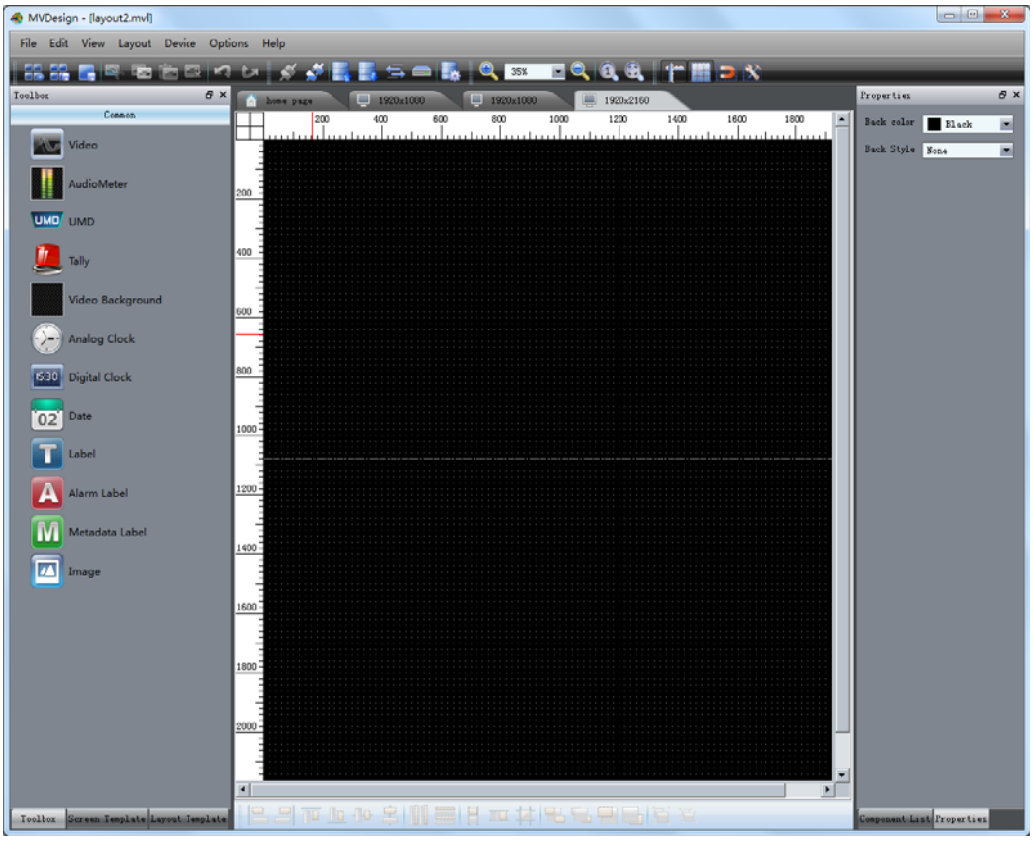
3.1.1 "New" option

1. Select "New" option, the hot key is Ctrl+N, "New" option is corresponding to in tool bar, 【New Layout】 window is prompted. There are 11 kinds of screen combinations in default, and displayed in 4 lines by the number of logical screens (1,2,3,4). For example, logical screen number of each layout template out of 5 layout templates in line 2 are 2.



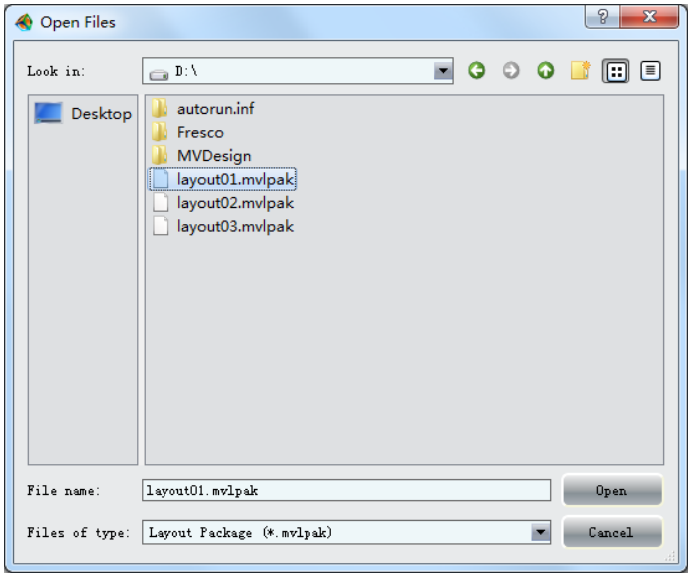
2. Select a screen combination, corresponding number of tabs will be shown in right side window according to the number of logical screen. For example, select first one in line 3, three new tabs 【1920x1080】,【1920x1080】,【1920x2160】will be created, and also present the resolution of logical screen.

3. Select a tab, users can edit layout in lower black area, fit size is shown below.

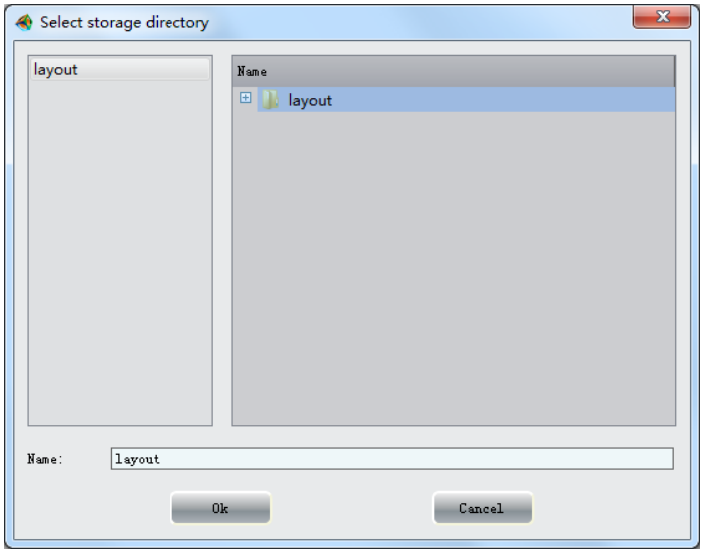


3.1.2 "Import Layout" Option

1. Select "Import Layout" option to pop-up 【Open Files】window. choose the layout template want to import (.mvlpak), the layout templates can come from any location, for example, can fixedly place external layout template in D:\.



2. Click Open button to pop-up Select storage directory window, save the template in layout folder. Layout folder is default folder of SCM Management software used to save layout templates. In default installation, layout folder is in C:\ SCM Management.

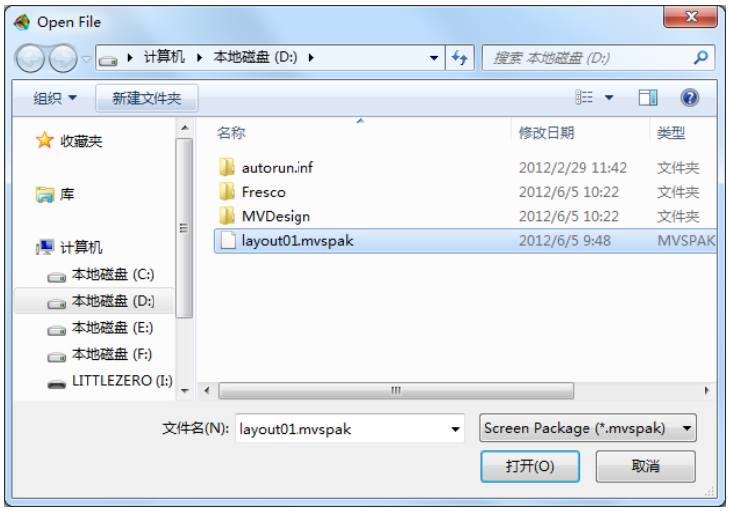


3. Click "Ok" button to complete import.

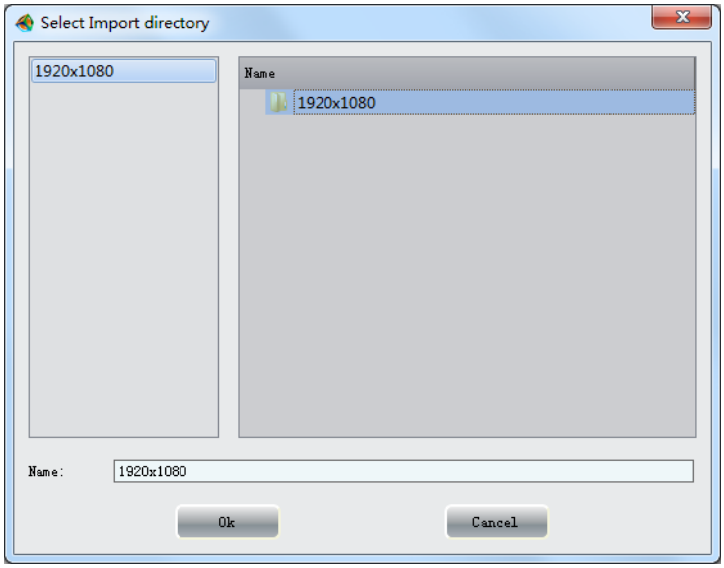
3.1.3 "Import Screen" Option

1. Select "Import Screen" option to pop-up 【Open File】window. choose the screen template want to import (.mvspak), the screen templates can come from any location, for

example, can fixedly place external layout template in D:\.



2. Click Open to pop-up Select Import Directory, save screen template in corresponding folder by its resolution. In default installation, folders for all resolution are saved in folder C:\ SCM Management\Screen. Click Ok to complete import.

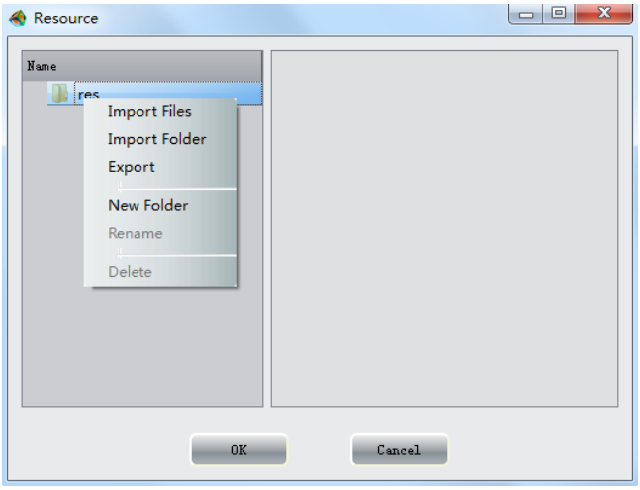


3.1.4 "Resource" Option

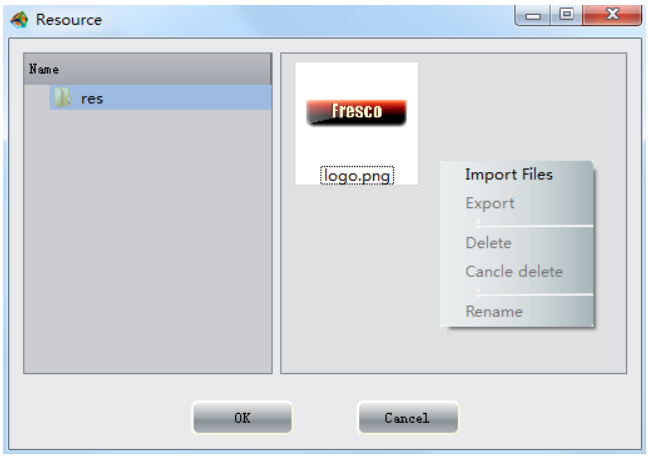
1. "Resource" Option responsible for all image resources management, can perform import, export, delete, rename and other operations for files and folders.
2. Select "Resource" Option to pop-up Resource window. In left side of window is res

folder, and corresponding image list in right side of window.

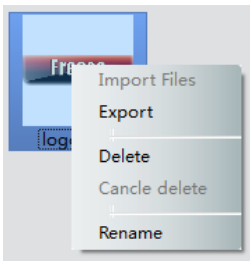
3. Right-click res folder to pop-up an option list, can import files (currently supported formats include: jpg, png, tif, bmp), folders, export, create new folder.



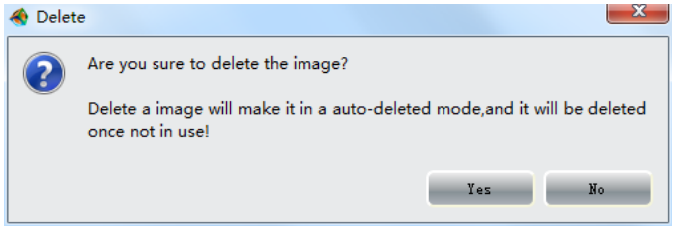
4. Right-click in blank space in right side image list to pop-up option list, can import image files.



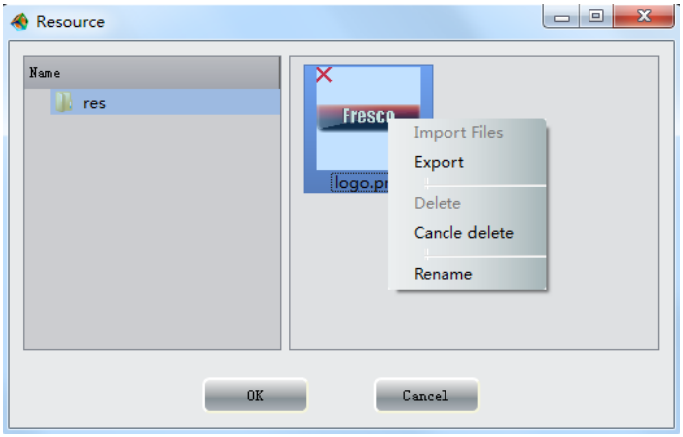
5. Right-click existing image, can perform export, delete and rename this image.



6. The delete confirmation window will be prompted when delete an image to confirm delete, if current image are not in use, it can be delete, otherwise delete fail.

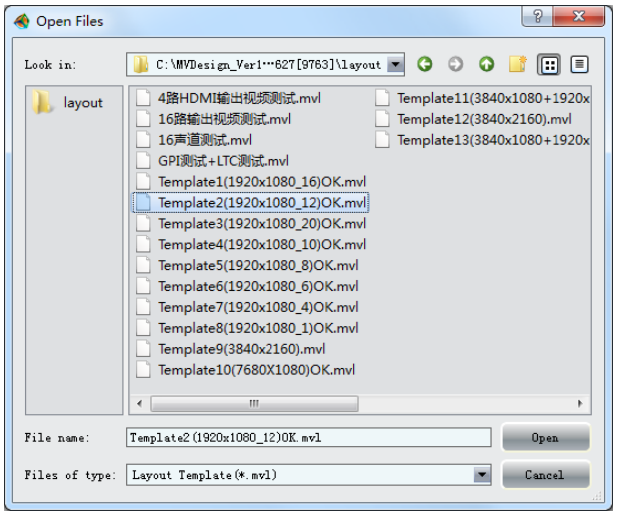

Delete
Are you sure to delete the image?
Delete a image will make it in a auto-deleted mode,and it will be deleted once not in use!
Yes
No

7. In case delete is failed, a red cross will emerge on image, in this time, right-click this image and choose Cancel delete option to cancel delete, this image will recover to normal.

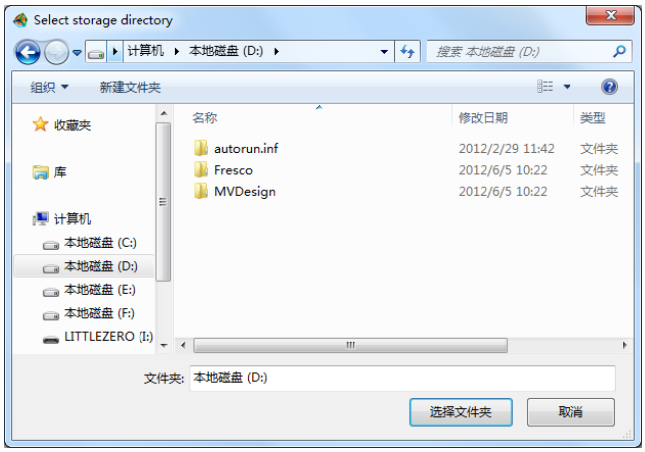


3.1.5 "Export Layout" Option

1. Choose "Export Layout" option to pop-up【Open Files】window, choose layout template need to export, and original templates are saved in layout folder which located in C:\ SCM Management.

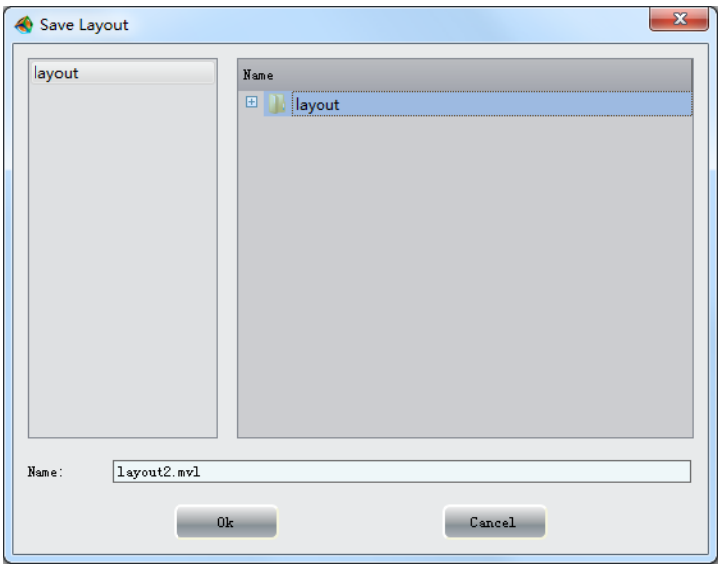


2. Click Open to pop-up【Select storage directory】window, choose a location will be used for saving exported template location, exported templates can be saved in any location, for example, can fixedly place exported layout template in D:\. Click "Choose folder" button to complete export.



3.1.6 "Save Layout" Option

Choose "Save Layout" Option to pop-up【Save Layout】window, the hot key is Ctrl+S, " Save Layout " option is corresponding to in tool bar. Input layout name, system will save it in the layout folder. In default installation, the layout folder is located in C:\ SCM Management.

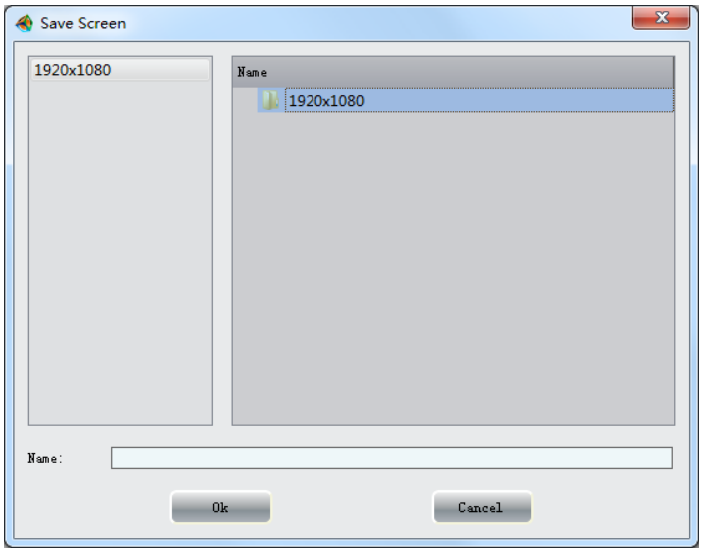


3.1.7 "Save Layout" Option

For those layout templates have already saved, can modify them and save them in other location, and can save them to other layout templates. choose a location in 【Save Layout】window.

3.1.8 "Save As Screen" Option

1. Choose "Save As Screen" option, corresponding to in tool bar, 【Save Screen】window, input name, click Ok to save layout as a screen template in folder which named by different resolution.



2. As shown in picture, there is 3840x2160 folder. In default installation, this folder is located in C:\ SCM Management\Screen.

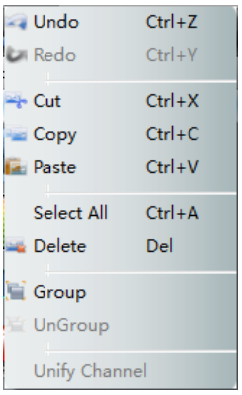
3.1.9 "Exit" Option

Choose "Exit" option to close SCM Management software.

3.2 【Edit】Menu Instruction

The options in Edit menu are mainly used for performing layout design. Edit menu

includes following options:



3.2.1 "Undo" Option

Choose "Undo" (Ctrl+Z) option, , to revoke previous action.

3.2.2 "Redo" Option

Choose "Redo" (Ctrl+Y) option, , to recover previous action.

3.2.3 "Cut" Option

Choose "Cut" (Ctrl+X) option, , to cut clicked tools.

3.2.4 "Copy" Option

Choose "Copy" (Ctrl+C) option, , to copy clicked tools.

3.2.5 "Paste" Option

Choose " Paste " (Ctrl+V) option, , to paste tools.

3.2.6 "Select All" Option

Choose "Select All" (Ctrl+A) option to select all objects in current layout .

3.2.7 "Delete " Option

Choose " Delete " (Del) option to delete choosed tools.

3.2.8 "Group" Option

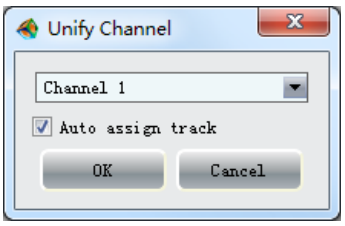
1. All tools in layout design area are originally independent, sometimes users need to perform same operation for multiple tools, with the intention of convenience and accuracy, multiple tools need to be grouped.
2. Choose "Group" option to group independent tools together, can operate integrally.

3.2.9 "UnGroup" Option

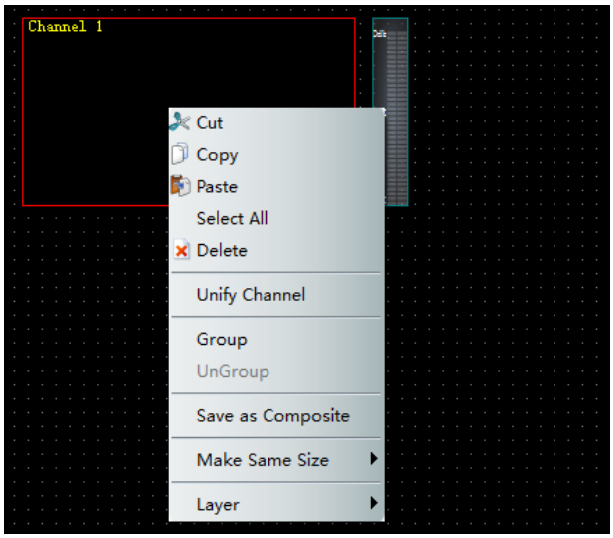
when need to independently operate one tool in a grouped tools, choose "UnGroup" option .

3.2.10 "Unify Channel" Option

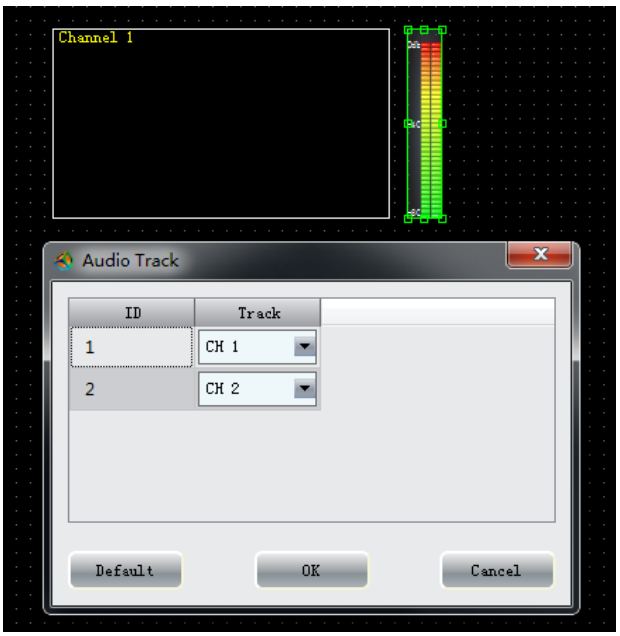
1. Choose "Unify Channel" option to pop-up【Unify Channel】window, can unify selected tools into same channel.



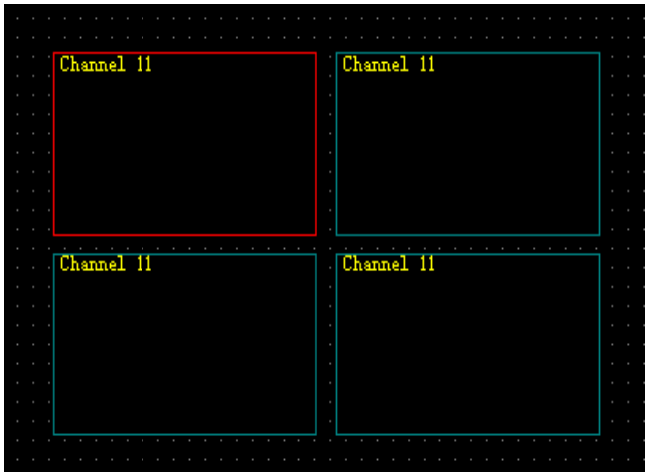
2. Users can also right-click on a group of selected tools, choose Unify Channel option in list to pop-up【Unify Channel】window.



3. As above picture, video and audio meter are unified to Channel9, if Auto assign track option is checked, four volume meters of audio meter from left to right orderly are CH1, CH2, CH3, CH4...

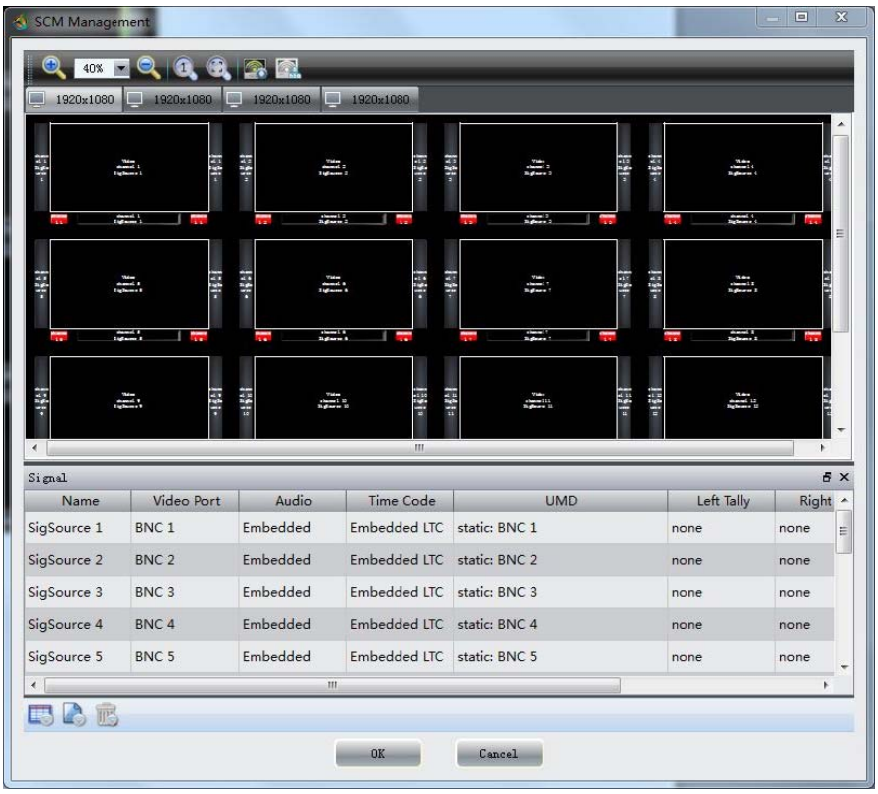


4. Can also unify multiple videos to same Channel.

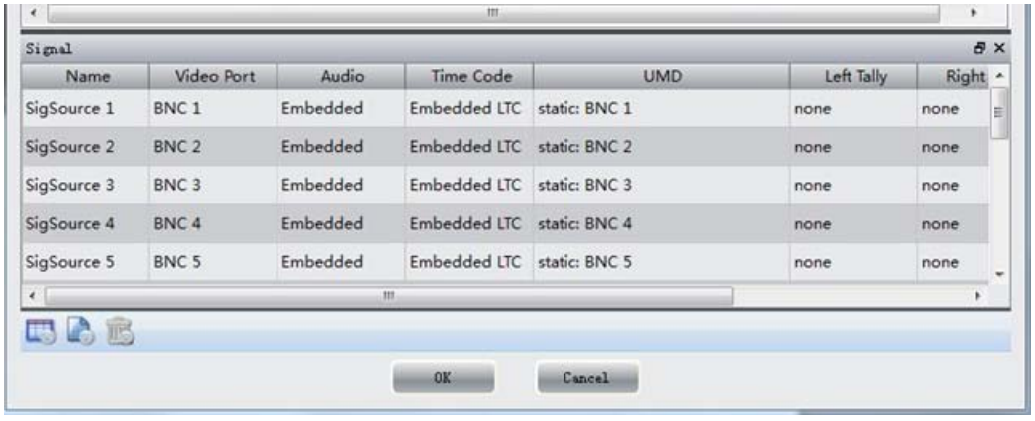


3.2.11"Signal Config" Option

Choose "Signal Config" Option to pop-up following window:



Press Default button , Signal sources will be BNC1~BNC16 in default. Also, can choose New signal source button and delete signal source button to add/delete signal sources.



Signal Config table includes Name, Video Port, Audio, Time Code, UMD, Left Tally, Right Tally, Follow AFD.

『Video Port』: none, BNC1~BNC16, HDMI-IN1~ HDMI-IN4

『Audio』: none, embedded, Audio Group1~Audio Group4

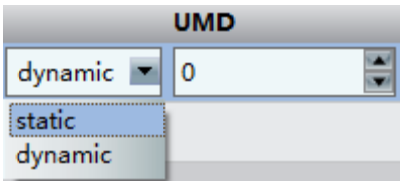
『Time Code』: none, Embedded LTC, Embedded VITC, LTC1~LTC4

『UMD』: When design a layout, associate video window and UND window to a

same channel, then signal sources can be configured in signal config window, there are two types of UMD:

1. Static UMD: When static UMD is chosen, UMD will change along with changing of physical port, Like UMD will be BNC1 if the signal source is BNC1.

2. Dynamic UMD: When Fresco is applied in complex environment, for example, there are router or UMD server in front of Fresco, dynamic UMD need to be used , match dynamic UMD with the output port of router then UMD information can be tracked. the range of UMD value is 0~1023, thereby achieve dynamic follow of UMD. Like picture below:



『Left Tally』: none, Follow UMD、GPI1~GPI32

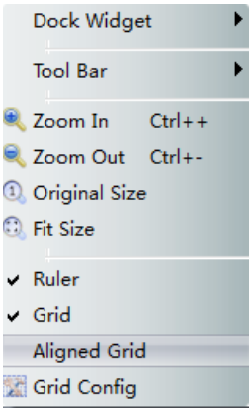
『Right Tally』: none, Follow UMD、GPI1~GPI32

『Follow AFD』: If this option is checked, videos can be letterboxed or de-letterboxed according to AFD information to complete up or down conversion.

After signal allocation, choose one of signals, hold the left mouse button, drag to one video window you want to assign, then drop it. you can perform signal config for video windows one by one. Click OK button to complete

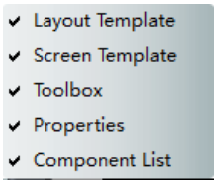
3.3 【View】Menu Instruction

【View】Menu includes following options:

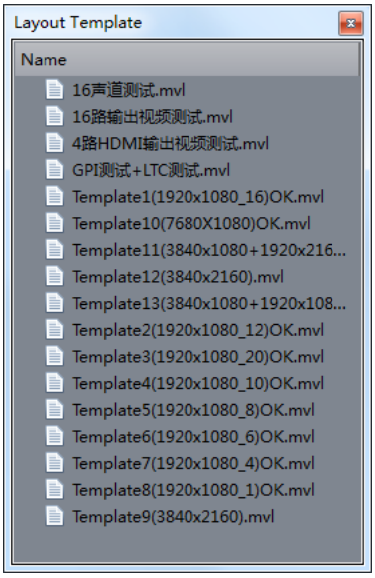


3.3.1 "Dock Widget" Option

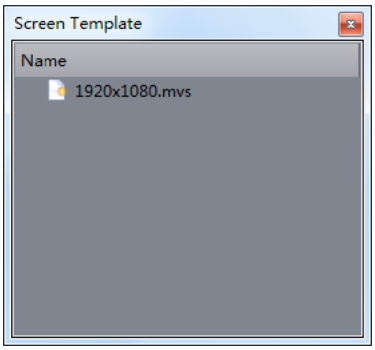
Expand "Dock Widget" option, includes Layout Template, Screen Template, Toolbox, Properties and Component List. After check some options, corresponding dock widgets will be shown in main software window.



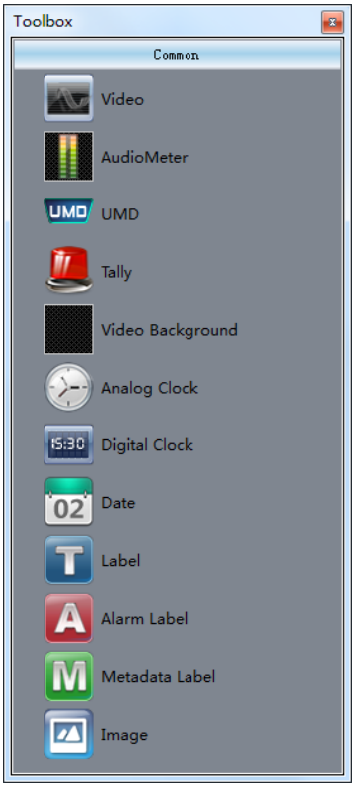
1) Layout Template



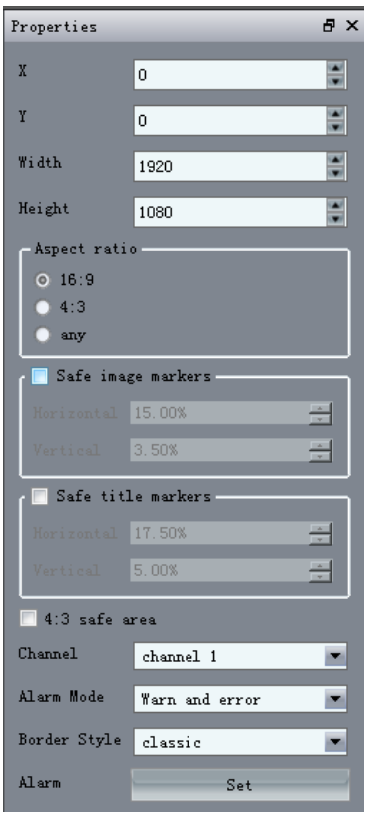
2) Screen Template



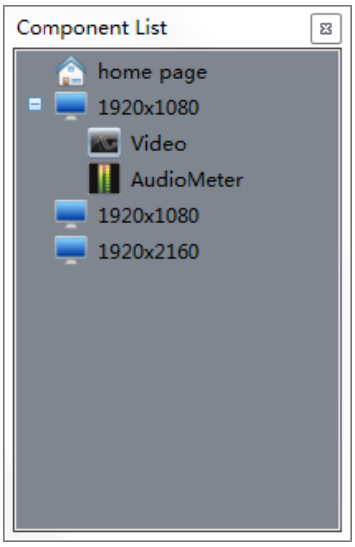
3) Toolbox



4) Properties



5) Component List

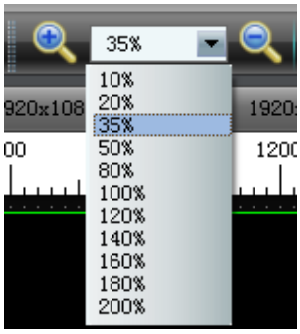


3.3.2 "Toolbar" Option

"Toolbar" option includes Common, Net, Scale and Grid. After check some options, these options will be shown on the interface.

3.3.3 "Zoom In", "Zoom Out" Option

1. Choose "Zoom In"(Ctrl++), "Zoom Out"(Ctrl+-) option, can zoom in or zoom out editing area by the order of scales



2. For example, current display is 35%, click to zoom in to 50%, while click to zoom out to 20%.

3. When need to perform fine adjustment for elements location, can use direction key "Up, Down, Left, Right" of keyboard to move selected elements. In different zoom scale, the distances of each move are relatively different. Details are depicted as following:

   1) When zoom scale is 10%~35%, 10 pixels for one move.

   2) When zoom scale is 50%~80%, 4 pixels for one move.

   3) When zoom scale is 100% or above, 2 pixels for one move.

4. In addition, left-click editing area, and use "Ctrl + Mouse Wheel" to quickly adjust zoom scale for editing area.

3.3.4 "Original Size" Option

Choose "Original Size" Option, , to adjust layout to original size. i.e. 100%.

3.3.5 "Fit Size" Option

Choose "Fit Size" option to adjust current layout size to a fit size so that all layout area can be shown in layout editing window, convenient for display for overall effect of layout.

3.3.6 "Ruler" Option

Choose "Ruler" option, , the rulers will be presented on the left side and upside of layout design area as helping role to assist users to estimate rough position of elements.

3.3.7 "Grid" Option

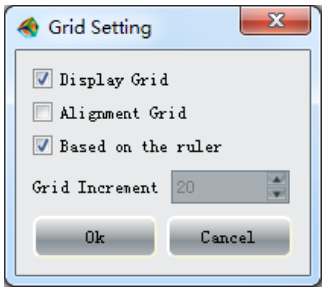
Choose "Grid" option, , the background of layout design area will be filled by grid, convenient for accurate positioning.

3.3.8 "Alignment Grid" Option

Choose "Alignment Grid" option, , or click Alignment Grid icon in toolbar. if this option is not chosen, the elements will be placed strictly according to the position you placed, if this option is chosen, the software will automatically adjust the positions of elements to grid alignment.

3.3.9 "Grid Setting" Option

1. Choose "Grid Setting" option, , to pop-up【Grid Setting】window, if Based on the ruler is checked, grid increment is set to 20 by default, if not checked, grid increment can be set by custom.



2. In【Grid Setting】:

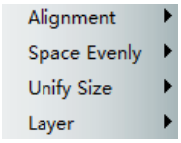
『Display Grid』: corresponding to "Grid" option in toolbar.

『Alignment Grid』: corresponding to "Alignment Grid" option in toolbar.

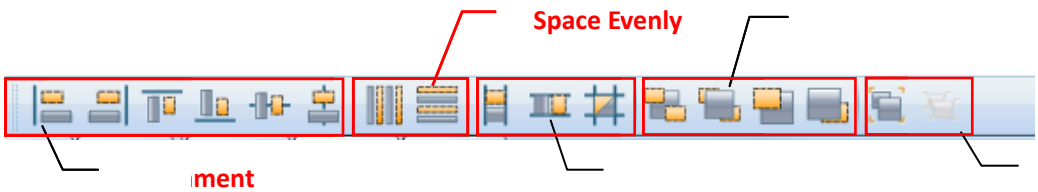
3. 『Based on the ruler』: corresponding to "Based on the ruler" option in toolbar. if Based on the ruler is checked, grid increment is fixed according to minimum increment of grid in current zoom scale, if not checked, grid increment can be set by custom.

3.4 【Layout】Menu Instruction

In SCM management software, includes following options:



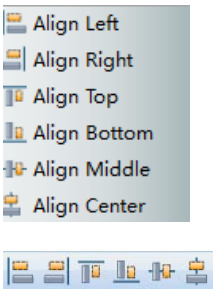
There are shortcut icons of for layout menu under the current layout design area.



For Alignment, Space Evenly and Unify Size, the border of tools formerly clicked is present blue, and the border of last clicked tool present red as a benchmark. blue tools will be adjusted based on red tool. i.e. last clicked is fixed, formerly clicked refer to last clicked.

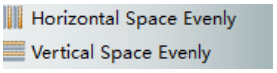
3.4.1 "Alignment" Option

Expand "Alignment" option, includes following sub-options:



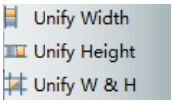
3.4.2 "Space Evenly" Option

"Space Evenly" option includes following sub-options:



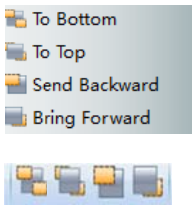
3.4.3 "Unify Size" Option

"Unify Size" option includes following sub-options:

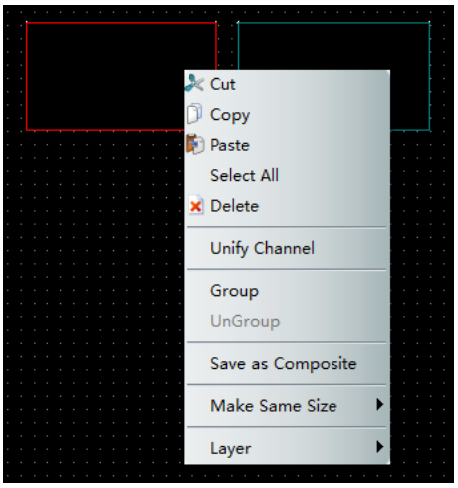


3.4.4 "Layer" Option

"Layer" option includes following sub-options:

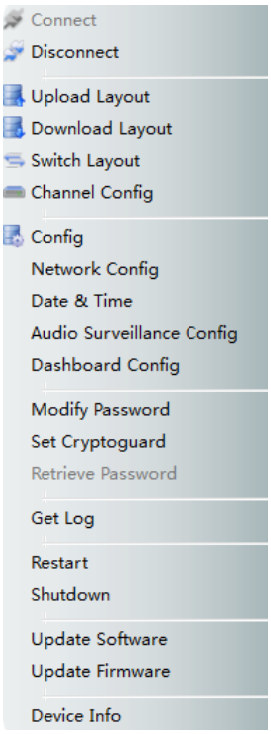


In addition, users can also adjust layer and unify size by use of right-click menu after choose an element or a group of elements.



3.5 【Device】Menu Instruction

Expand【Device】menu, following options are included:



3.5.1 "Connect" Option

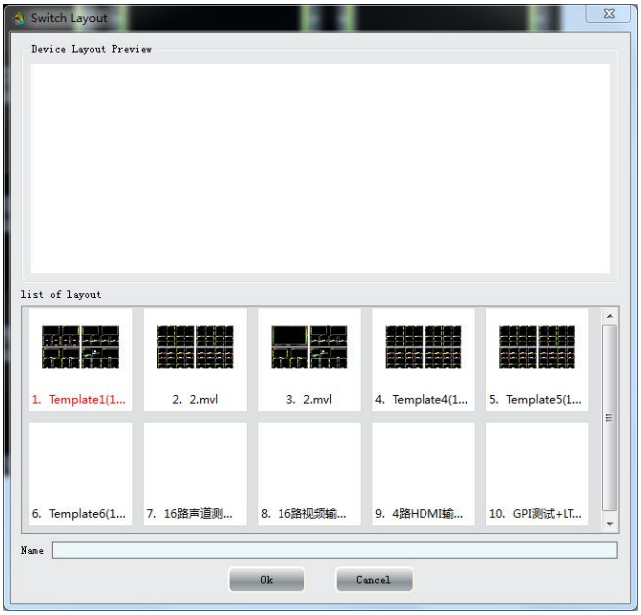
"Connect" option is corresponding to in the toolbar, press it to pop-up Login window, input IP address and password (IP address will be displayed in right bottom corner of Fresco start-up interface, the default password is admin). Login success will be prompted if password is valid, and control terminal is able to interact with device terminal, such as upload layout.

3.5.2 "Disconnect" Option

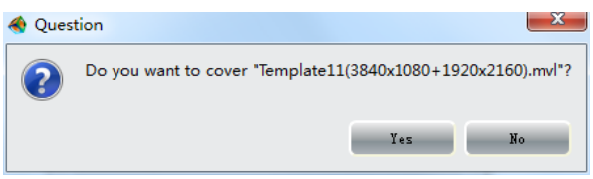
Choose "Disconnect" option, this option is corresponding to in the toolbar, software cannot communicate with device option.

3.5.3 "Upload Layout" Option

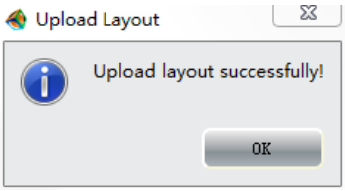
1. Choose "Upload Layout" option to pop-up "Upload layout" window, this option is corresponding to in the toolbar, the list of layout includes layouts in current device terminal in order of 1~10.



2. The control terminal has up to 10 layouts. When upload layout, can replace existing layouts with the layout which want to upload, for example, replace 1.Template(1920x1080_16)OK.mvl in current list.
3. In this time, the Question window is prompted to ask users confirm cover " Template(1920x1080_16)OK.mvl". If choose Yes, the old layout will be replaced, choose No to cancel upload.



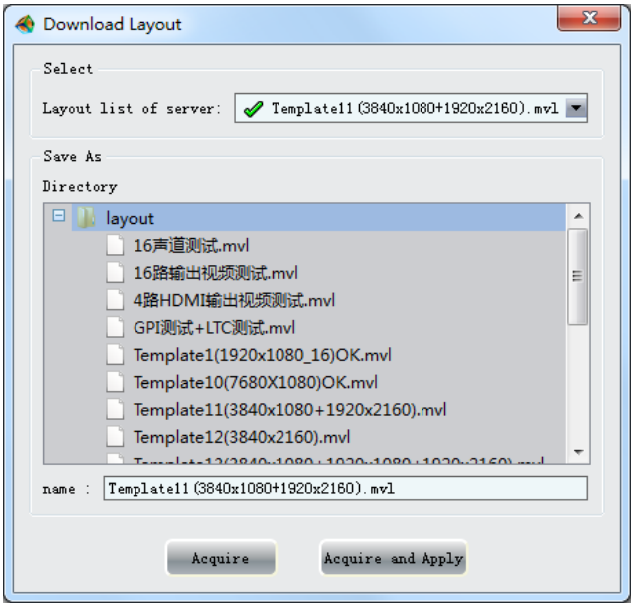
4. Users can also choose one blank of 2~10, then input name of layout, click "Upload". "Upload layout successfully!" is prompted after successful upload, this layout is uploaded from control terminal to device terminal.



5. If click "Upload and apply", uploaded layout will be replayed on the screen immediately.

3.5.4 "Download Layout" Option

1. Choose "Download Layout" option to pop-up " Download layout" window, this option is corresponding to in the toolbar, can download layouts from device terminal to control terminal.

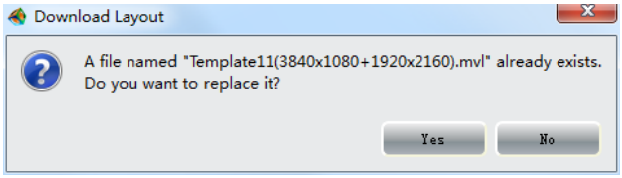


2. Layout list of server gives all layouts saved in device terminal, users is able to choose a layout which want to download in drop-down list. For example, select " Template10(7680x1080)OK.mvl ", the name blank at the bottom will inherit this layout name automatically, users can also rename it. the default path of saving layout

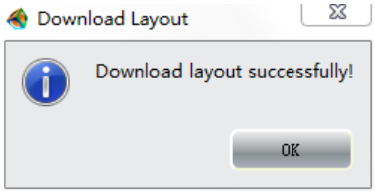
is Layout folder which located in C:\SCM management in default installation.

3. Click "Acquire" button, if there is no same-name layout in layout folder, then prompt "Download layout successfully", and " Template10(7680x1080)OK.mvl " will be saved in layout folder.

4. If there is same-name layout in the folder, "Download Layout" is prompted to point out relative information, can confirm replace.

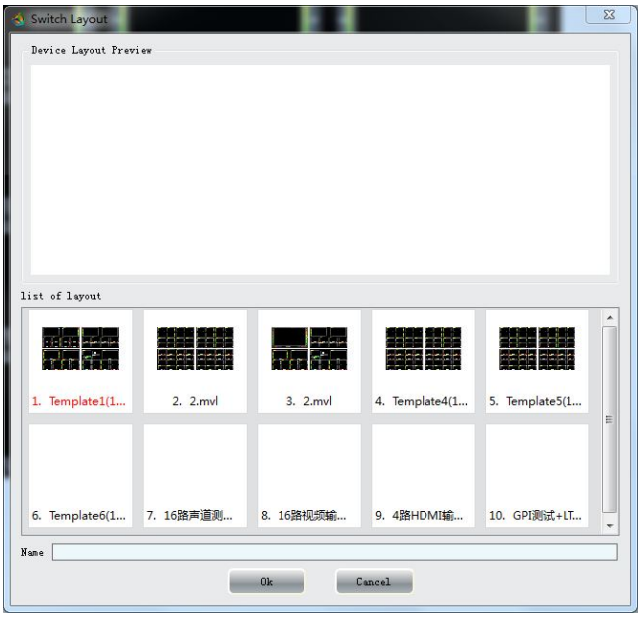


5. Click "Yes" to replace original layout; click "No" to cancel download.

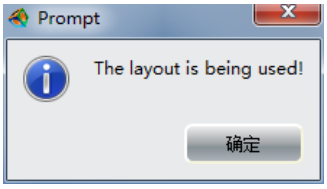


3.5.5 "Switch Layout" Option

1. Choose "Switch Layout" option to pop-up【Switch layout】window, this option is corresponding to in the toolbar. List of layout show all layouts currently saved in server, and the red layout means this layout is currently in use.

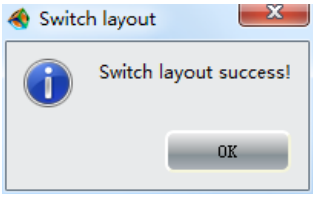


2. If choose the red layout, a window with " The layout is being used!" will be shown.



3. Choose a layout which want to switch, for example, choose " Template10(7680x1080)OK.mvl ", the name blank at the bottom will inherit "Template10(7680x1080)OK.mvl" automatically.

4. Click "Ok", Switch layout window is prompted to show "Switch layout success!", then the current layout will change to the layout you want to see on the screen.

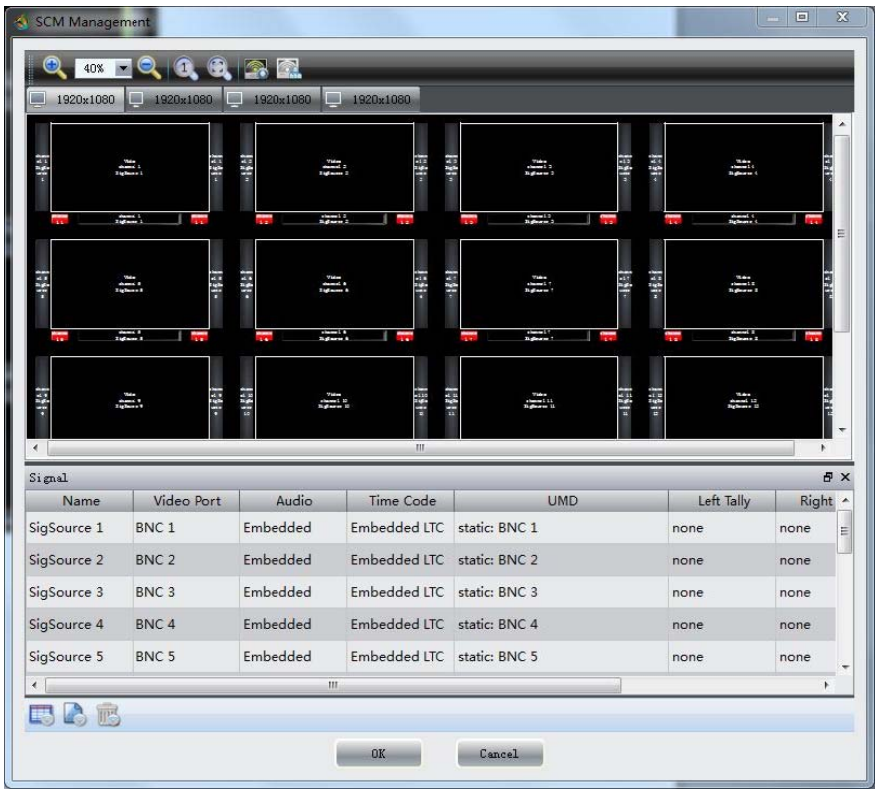


3.5.6 "Shortcut Key Switch Layout" Option

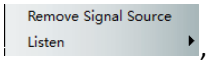
"Shortcut Key Switch Layout" means using hotkeys on the keyboard to switch layout. Multiviewer server can save up to 10 layout presets, and these 10 presets are respectively corresponding to F1-F10 on the keyboard. For example, press F1 can switch current layout to layout preset1.

3.5.7 "Channel Config" Option

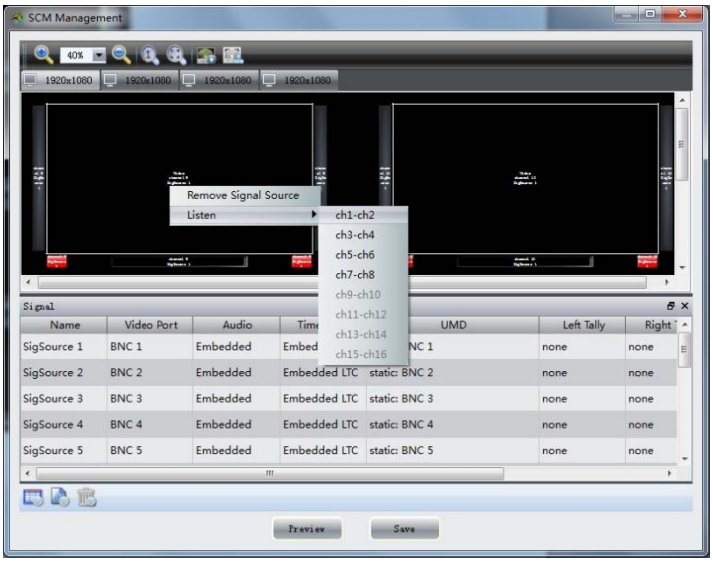
1. Choose "Channel Config" option to pop-up【Channel Config】window, this option is corresponding to in the toolbar.



Put mouse cursor on any one video window and right-click to show



, you can monitor audio for this video.

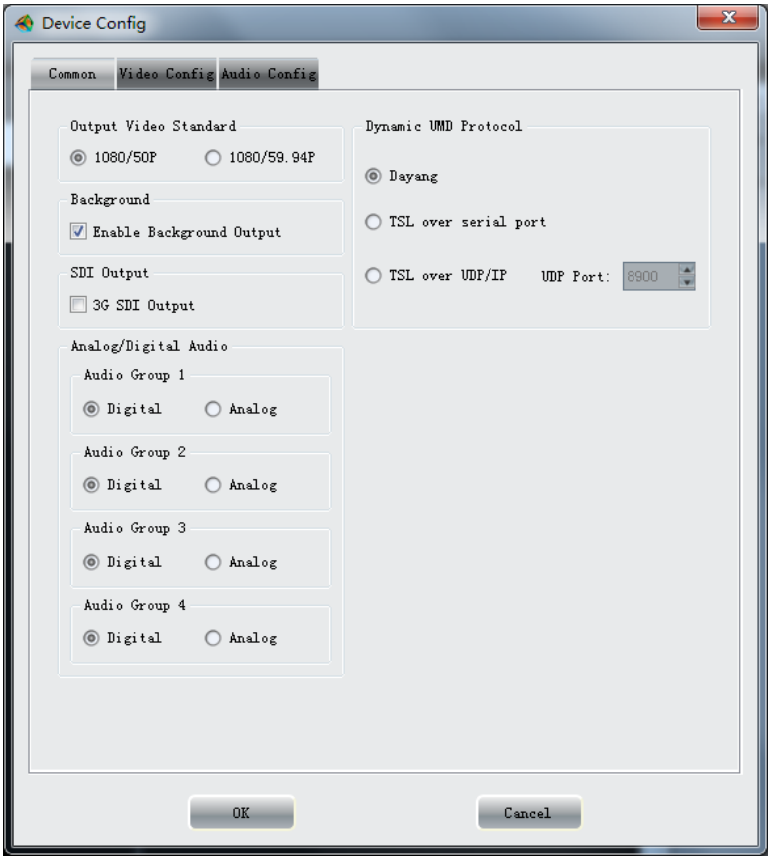


After signal config, click "Preview", current layout will be displayed on the screen, but has not saved, if there is no problem, you can click "Save" to update current layout to Fresco server.

3.5.8 "Config" Option

2. Choose "Config" option to pop-up 【Device Config】window, corresponding to in the toolbar, include three parts of config: Common, Video Config and Audio Config.

3. The Common tab is shown as following:



4. The meanings of parameters are:

『Output Video Standard』: There are two output video standards: 1080/50p and 1080/59.94p. Please choose according to local condition. If screen supports 50, 1080/50p should be chosen.

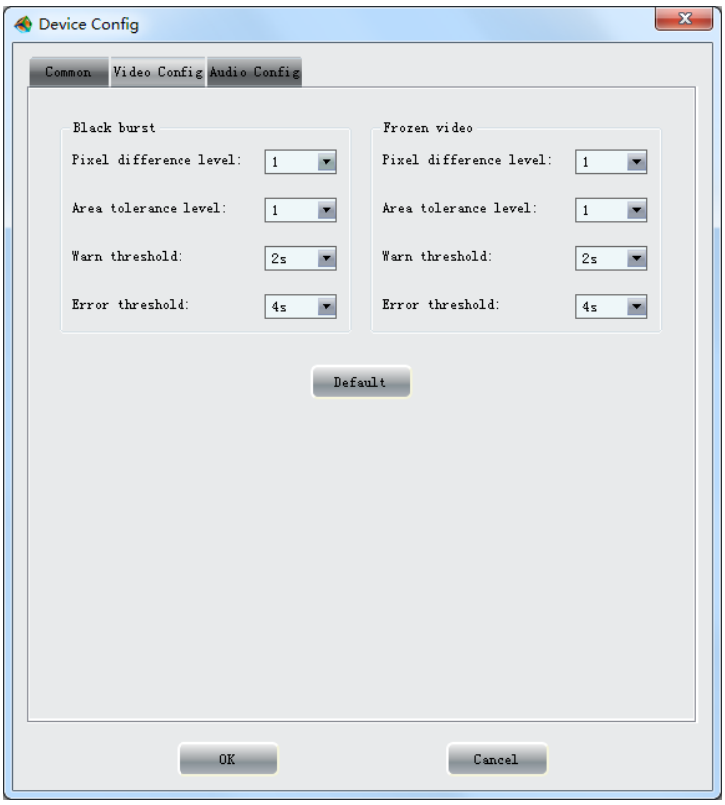
『Analog/Digital Audio』: Extended audio input includes analog and digital, if audio signal is analog, please check Analog, conversely check digital.

『SDI Output』: For HD-SDI monitoring output of each module, there is switching between 3G SDI and HD-SDI. If 3G SDI Output is checked, the output signal is 1080p50, conversely is 1080i50.

『Dynamic UMD protocol』: Dynamic UMD of Fresco server supports DAYANG source

protocol, TSL over protocol, TSL over UDP/IP.

5. The Video Config tab is shown as following:



6. The meanings of parameters are:

『Pixel different level』: This parameter affects probing accuracy of black burst and video frozen. The lower level, the higher probing accuracy.

『Area tolerance level』: This parameter affects probe accuracy of black burst and video frozen. The lower level, the higher probe accuracy.

For black burst and video frozen probing of video signal, for digital signal, these two are set to 1 based on experience value, for analog value, these two value are set to 5.

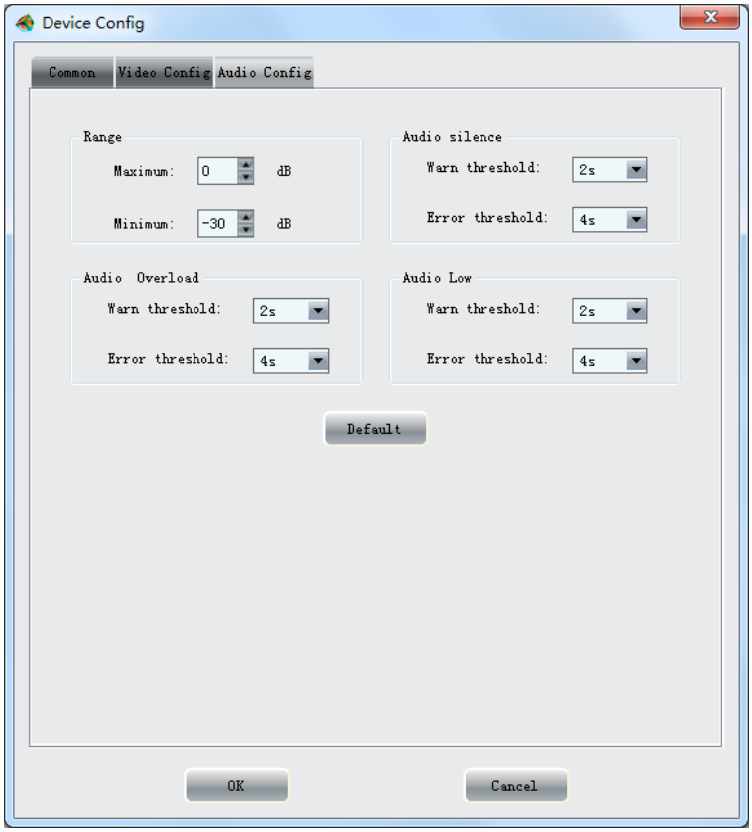
『Warn threshold』: When probe black burst and video frozen of video signal, if duration over this threshold, then Fresco-S will automatically generate warn information

『Error threshold』: When probe black burst and video frozen of video signal, if duration over this threshold, then Fresco-S will automatically

generate error information.

In the view of order of severity, error outclass warn, so error threshold should be higher than warn threshold. if warn can be tolerated, error need to be interfered manually.

7. The Audio Config tab is shown as following:



8. The meanings of parameters are:

『Range』: Maximum value is threshold used for probing audio overload, experience value is -6dBFS, audio over -6dBFS is considered to be overload.

Minimum value is threshold used for probing audio too low, experience value is -20dBFS, audio under -20dBFS is considered to be too low.

Experience value for audio probing: REF level is -20dBFS, compression value is -6 dBFS.

『Warn threshold』: When probe mute, audio too low and audio overload of video signal, if duration over this threshold, then Fresco-S will automatically

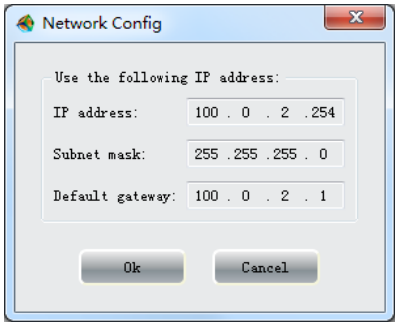
generate warn information.

『Error threshold』: When probe mute, audio too low and audio overload of video signal, if duration over this threshold, then Fresco-S will automatically generate error information.

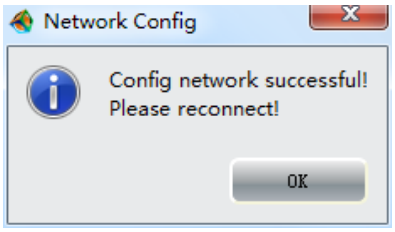
In the view of order of severity, error outclass warn, so error threshold should be higher than warn threshold. if warn can be tolerated, error need to be interfered manually.

3.5.9 "Network Config" Option

1. In the first time of login server, IP address, subnet mask and gateway are default. after first successful login, choose "Network Config" option to input new IP address, subnet mask and gateway to modify them.


Network Config
Use the following IP address:
IP address: 100 . 0 . 2 .254
Subnet mask: 255 .255 .255 . 0
Default gateway: 100 . 0 . 2 . 1
Ok
Cancel

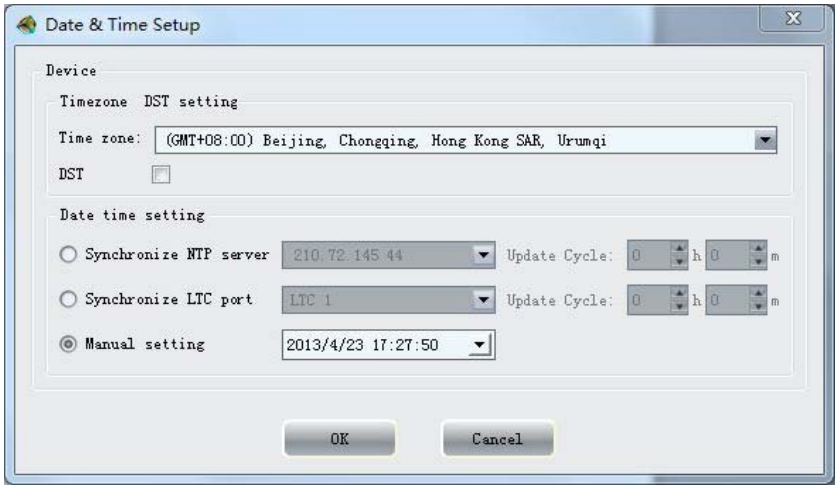
2. Click OK, following information will be prompted. Reconnect to run normally.



3. When restart Fresco-S server, new IP address, subnet mask and gateway will be shown in bottom right corner. users should use new IP address when re-login.
4. Through network config function, can place control terminal and device into same network segment so that control terminal can visit device.

3.5.10"Date/Time" Option

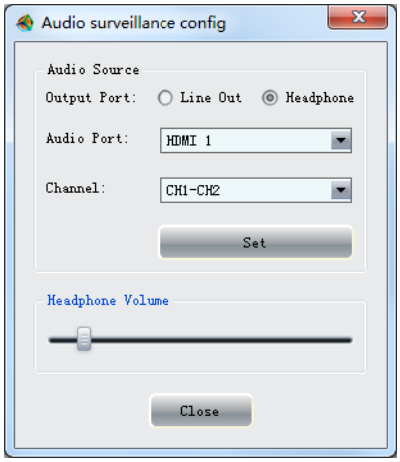
1. Choose "Date/Time" option to pop-up 【Date & Time Setup】window, the first line is Time zone, the default is (GMT-06:00) central time (US and Canada); next is time and date setting, there are two ways of timing, one is manual timing, another one is NTP server timing.
2. If choose NTP timing, please check "Synchronize server clock with Network Time Protocol server", then set IP address of server. In this way, the time of local server will be synchronized with NTP server.



3. Uncheck "Synchronize NTP server "or "Synchronize LTC port ",users can set time and date manually.

3.5.11"Audio Surveillance Config" Option

1. Choose "Audio Surveillance Config" option to pop-up【Audio Surveillance Config】.



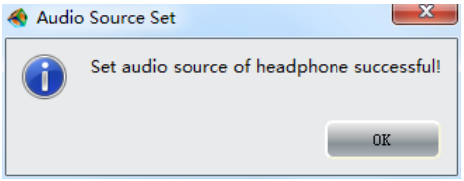
2. The parameters are explained as following:

『Output Port』: There are Line Out and Headphone, the former is voice box output, and the later is headphone output, and volume of headphone can be adjusted by "Headphone Volume" slide.

『Audio Port』: Drop-down list includes Audio Group 1, Audio Group 2, Audio Group 3, Audio Group 4, HDMI 1, HDMI 2, HDMI 3, HDMI 4, BNC 1~16.

『Channel』: when audio port is HDMI, Channel just has CH1-CH2, but when audio port is one of others, Channel has CH1-CH2, CH3-CH4, CH5-CH6, CH7-CH8.

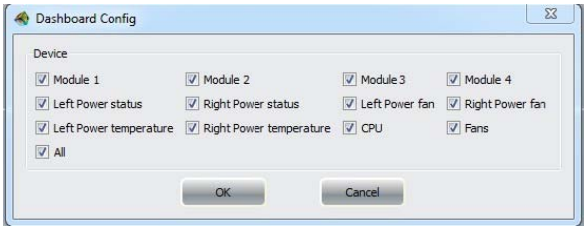
『Set』: After successful setting of output port, audio port, channel and headphone volume, click Set, following information will be prompted.



3. Users can change Channel option and use headphone or oscilloscope to monitor every channels.

3.5.12"Dashboard Config" Option

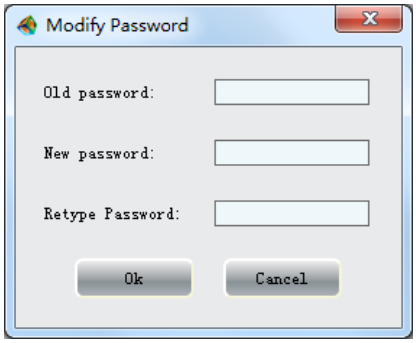
1. Choose "Dashboard Config" option to pop-up【Dashboard Config】.



2. When modules, powers, fans, temperature and CPU have problem, DashBoard will show relative information automatically, and users can choose what will be monitored.

3.5.13"Modify Password" Option

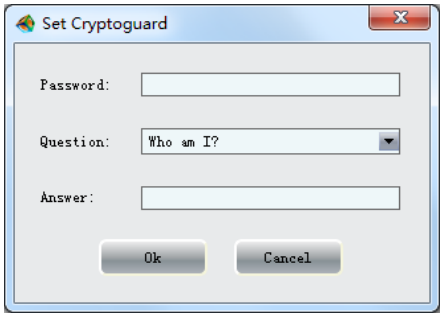
1. Choose "Modify Password" option to pop-up【Modify Password】window, all blanks here cannot be empty, under the condition of old password is valid and two new passwords are same, users can modify password successfully.



2. Users should use new password in next login.

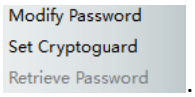
3.5.14 "Set Cryptoguard" Option

Choose " Set Cryptoguard " option to pop-up Set Cryptoguard option. Input your password, choose a question from Question drop-down list, and answer it. Cryptoguard question take a safety effect when retrieve password.



3.5.15"Retrieve Password" Option

1. When users are going to login device via login window of SCM management software, if forgot password, can use "Retrieve Password" option.

2. Under the condition of correct IP address, question and answer, input new password, and confirm it, click OK to set this new password.
3. After successful login with new password, Retrieve password presents gray and cannot choose 

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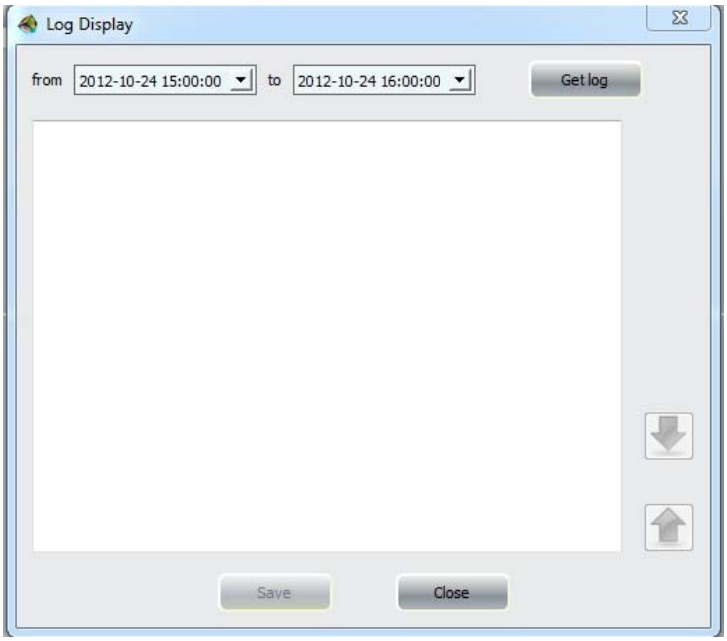
3.5.16 "Get Log" Option

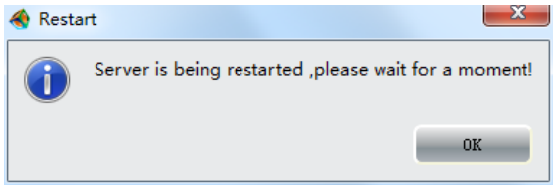
1. SCM management software is able to automatically record alarm information, exception which occur in server running into log. Click "Get Log" option to pop-up 【Log Display】window.



2. Choose a time period (the minimum unit of time choosing is hour), click Get Log to view exception information if exist.

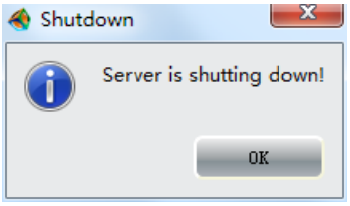
3.5.17 "Restart" Option

Choose "Restart" option to pop-up【Restart】window with information: Server is being restarted, please wait for a moment! Click OK to disconnect control terminal to device terminal, users can reconnect them after restart.



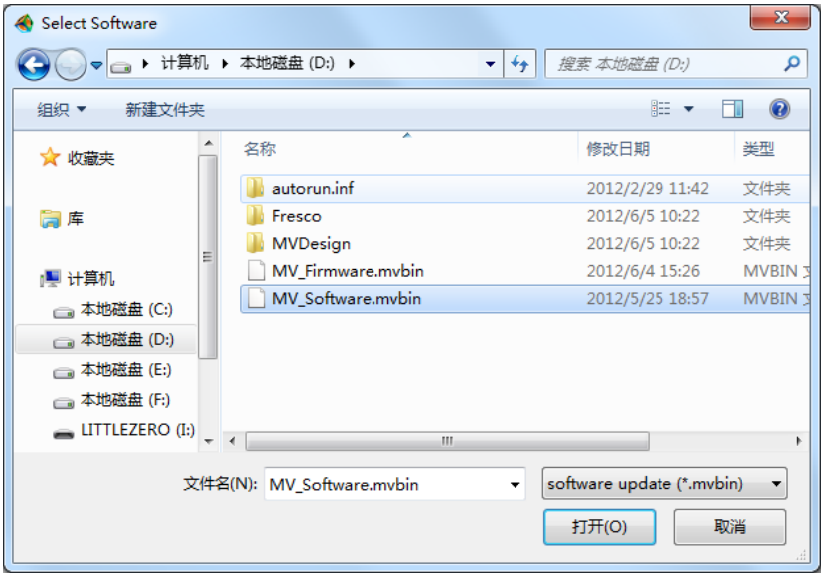
3.5.18 "Shutdown" Option

Choose "Shutdown" option to pop-up 【Shutdown】 window, following information will be prompted, click OK to confirm shutdown, and the connection between control terminal and device terminal are break.

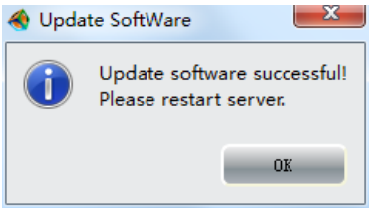


3.5.19 "Update Software" Option

1. The updating of software need be performed with SCM management software. Open SCM management, and connect device terminal, choose『Update Software』option to pop-up 【Select Software】window.

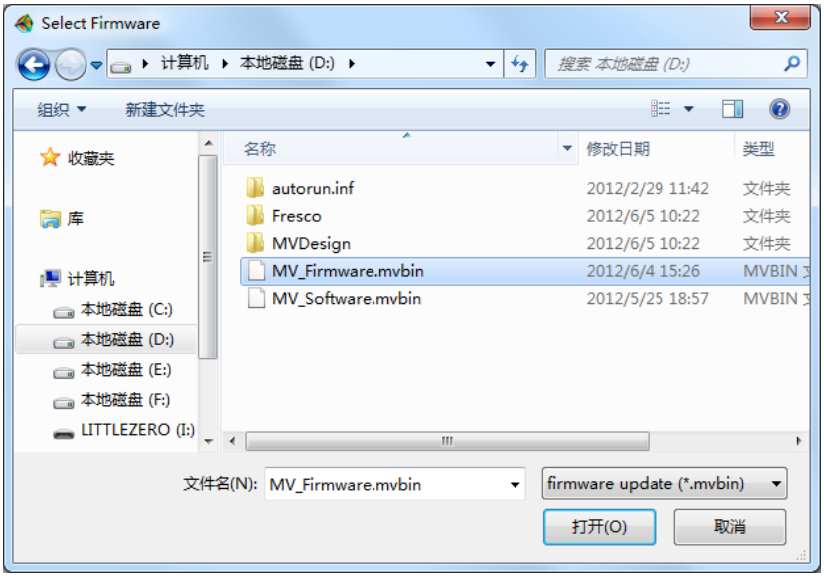


2. Choose software updating package, and press "Open", sofeware start to update. Users can view updating progress in the updating process.
3. After successful updating, a window will prompt following information. Users need to manually restart server (Multi-viewer chassis), choose『Restart』in the【device】menu, then updating is effective.



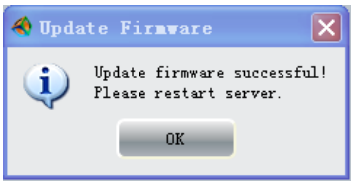
3.5.20 "Update Firmware" Option

1. The updating of firmware need be performed with SCM management software. Open SCM management, and connect device terminal, choose『Update firmware』option to pop-up 【Select firmware】window.



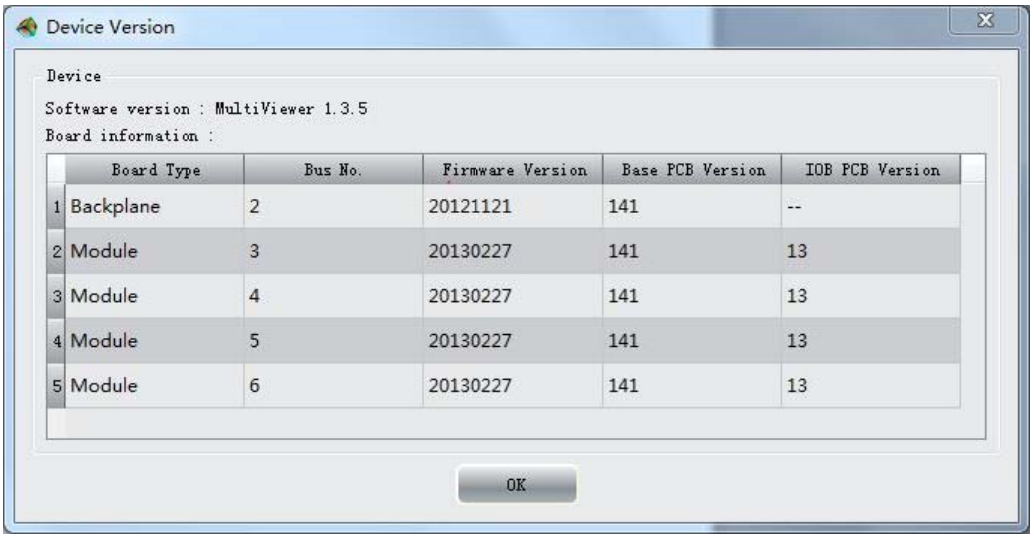
2. Choose firmware updating file (.mvbin), and press Open to start updating.

3. After successful updating, a window will prompt following information. Users need to manually restart server (Multi-viewer chassis), choose『Restart』in the【device】menu, then updating is effective.



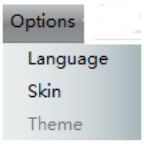
3.5.21 "Device Info" Option

Connect device terminal and choose "Device Info" option to pop-up 【Device Info】window, this window displays software version and board card info.



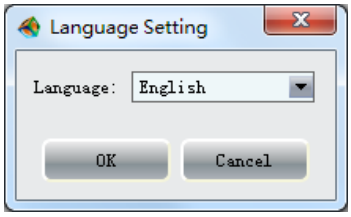
3.6 【Options】Menu Instruction

Expand【Options】menu in SCM management software, including "Language", "Skin", "Theme" options. Users can set language, Skin and theme about software interface.



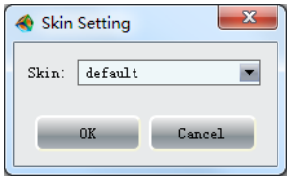
3.6.1 "Language" Option

Choose "Language" option to pop-up【Language Setting】window, there are English and Chinese (simplified).



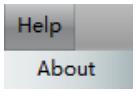
3.6.2 "Skin" Option

Choose "Skin" option to pop-up【Skin Setting】window, currently just has default skin.

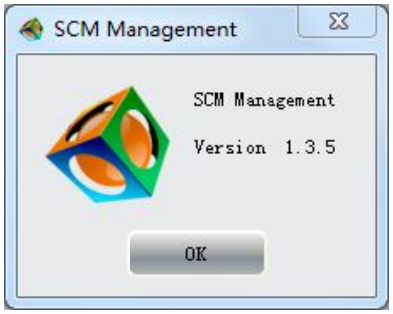


3.6.3 "Help" Option

1. Choose "About" option in【Help】option,【SCM management】will be shown.



2. This window will show software name and version.



4 Toolbar

The Toolbar of SCM management software includes common tools, net tools, scale tools and grid tools. Adopt hot keys to extract functions from menu so that improve operation efficiency. Previous chapter has already gave detailed functions for each options in the toolbar, we will not give unnecessary details.

4.1 Common Tools

Common tools include "New", "Save Layout", " Save Screen As", "Cut", "Copy", "Paste", "Delete", "Undo" and "Redo".

4.2 Net Tools

Net tools includes "Connet", "Disconnect", "Upload Layout", "Download Layout", "Channel Config", "Config".

4.3 Scale Tools

Scale tools include "Zoom In", "Zoom Out", "Original Size" and "Fit Size".

4.4 Grid Tools

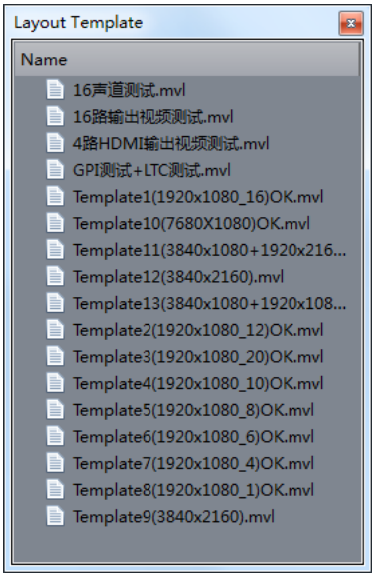
Grid tools include "Ruler", "Grid", "Grid Alignment", "Grid Setting"

5 Resource Selection Area

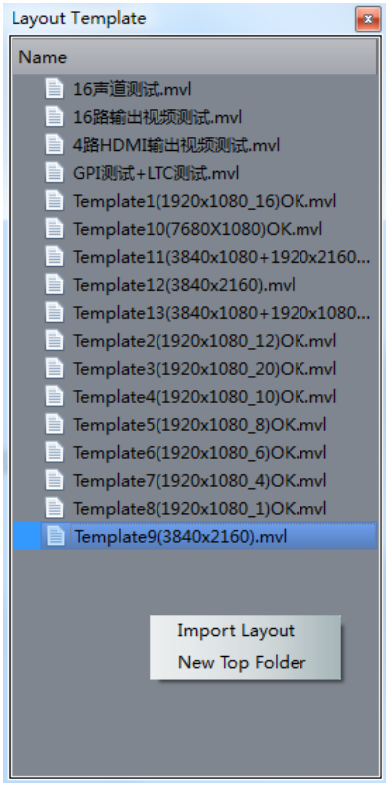
Resource selection area include "Layout Template", "Screen Template" and "Toolbox".

5.1 Layout Template

1. Choose『Dock Widget』option in the【View】menu, and select『Layout Template』option, the layout template window will be shown at left side of window to display existing layout templates.



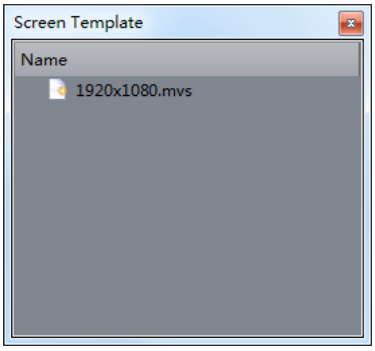
2. Right-click the blank area of layout template window, can choose Import Layout and New Top Folder.



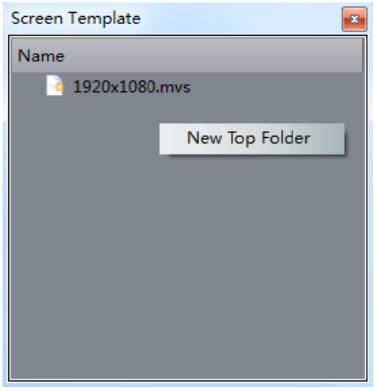
5.2 Screen Template

1. Choose『Dock Widget』option in the【View】menu, and select『Screen Template』option, the screen template window will be shown at left side of window to display

existing screen templates.

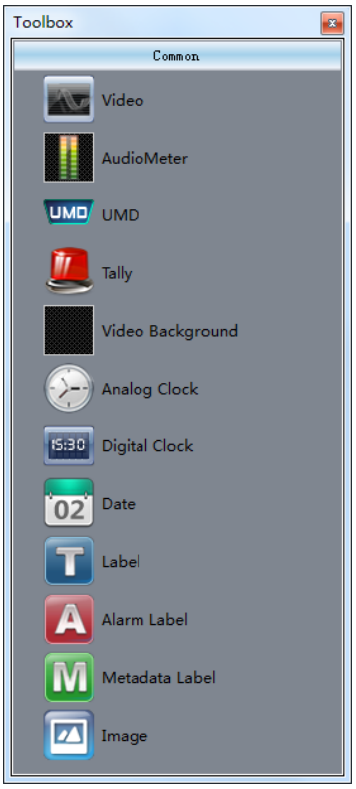


2. Right-click the blank area of screen template window, can choose New Top Folder.



5.3 Toolbox

1. Choose『Dock Widget』option in the【View】menu, and select『Toolbox』option, the toolbox window will be shown at left side of window. There are following objects:



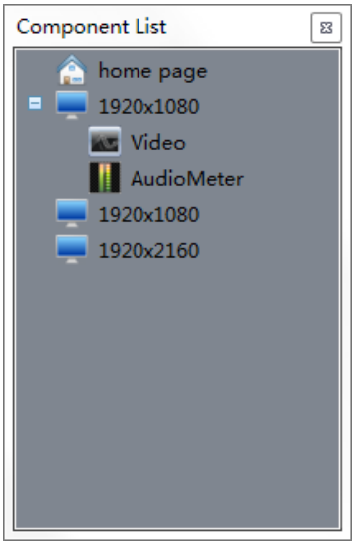
2. Every objects have their own properties. Users can drap-drop them into layout design area.

6 Element Property Area

Element property area of SCM management software include "Properties" and "Component List".

6.1 Component List

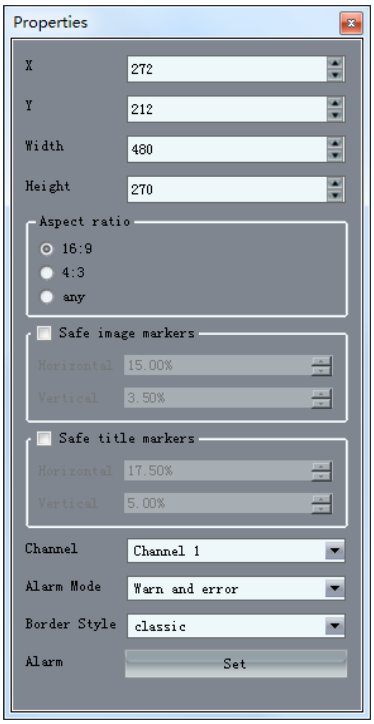
1. Choose『Dock Widget』option in the【View】menu, and select『Component List』option, the Component List window will be shown at right side of window.



2. Component List gives resolution of current layout, and list all components are being used.

6.2 Properties

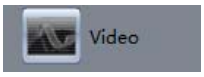
1. Choose『Dock Widget』option in the【View】menu, and select『Properties』option, the Properties window will be shown at right side of window. In the process of layout design, setting properties of layout can help achieve desired effects.
2. Choose one of elements in layout design area, such as audio, then set audio properties in corresponding properties window.

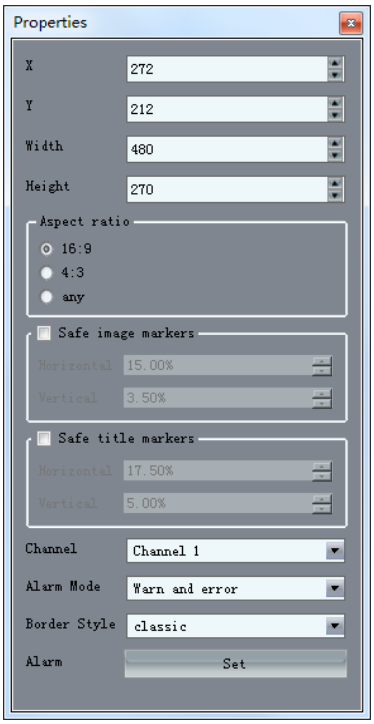


3. Next introduce property parameters included in each properties window.

6.2.1 Video

Click video element in layout design area, can set relative parameters in corresponding window.





1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: Width of video.

『Height』: Height of video.

Width and height are self-adaption according to predefined aspect ratio.

2) Aspect ratio

『16:9』: Aspect ratio is 16:9。

『4:3』: Aspect ratio is 4:3。

『any』: After choose aspect ratio to 16:9, then choose any, in this way aspect ratio is 16:9. After choose aspect ratio to 4:3, then choose any, in this way aspect ratio is 4:3.

3) Safe Image Makers

『Horizontal』: Horizontally indicate the range of displayed image.

『Vertical』: Vertically indicate the range of displayed image.

4) Safe Title Makers

『Horizontal』: Horizontally indicate the range of video title.

『Vertical』： Vertically indicate the range of video title.

5) Channel Setting

『Channel』： Set channel associated with this video.

Please notice different size of videos must be associated with different channels; while same size videos could be associated with same channel or different channels.

6) Alarm Mode

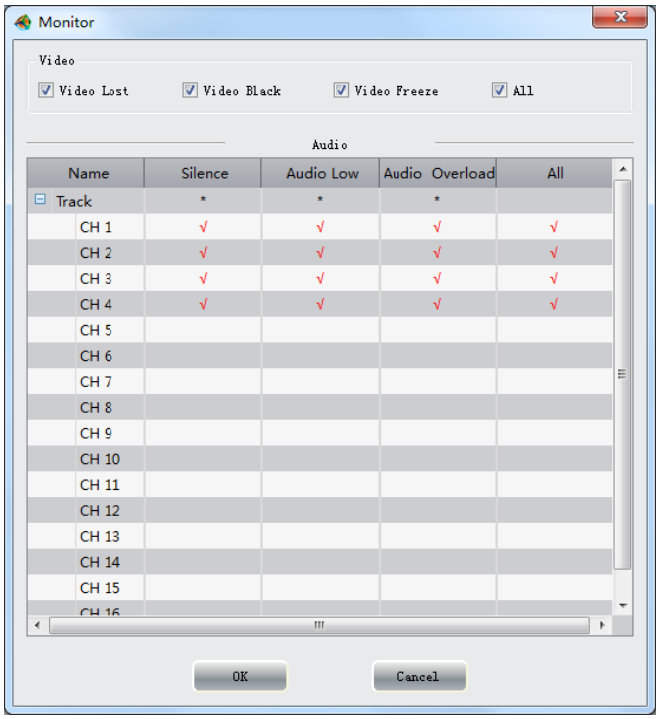
『Alarm Mode』： Alarm mode is warn and error for default, i.e. when video occur lost, black burst or frozen video, warn and error are both displayed. other options include no warn, error, warn which represent no alarm, just error alarm and just warn alarm.

7) Border Style

『Border Style』： Currently just have classic style.

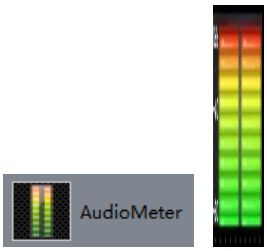
8) Alarm

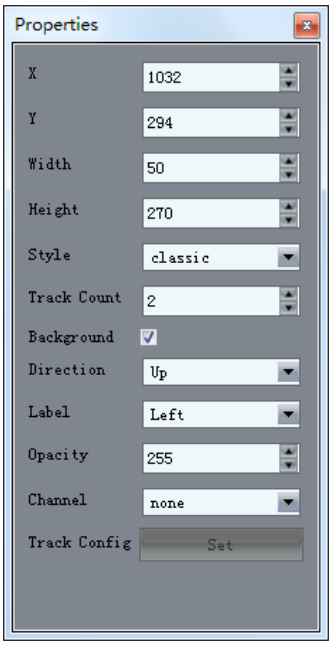
『Alarm』： Click alarm set to pop-up【monitor】window. Users can choose probing items according to practical use.



6.2.2 Volume Meter

Click audio meter element in layout design area, can set relative parameters in corresponding window.





1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of meter, the unit is pixel.

『Height』: The Height of meter, the unit is pixel.

2) Style

『Style』: Currentlu just have classic style.

3) Track Count

『Track Count』: At least is 1, at most is 16

4) Background

『Background』: If check this option, audio will present gray background.

5) Direction

『Direction』: Currently just support UP.

6) Label

『Label』: Label could be none, left and right.

7) Opacity

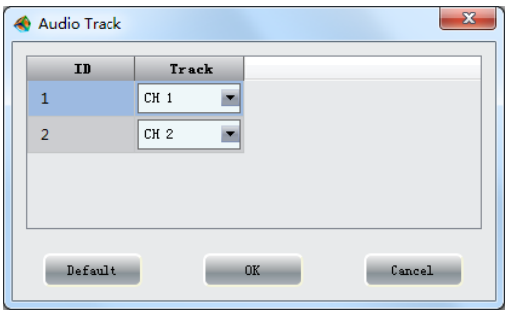
『Opacity』: In case have background, opacity is also effective for background.

8) Channel

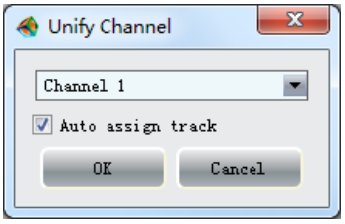
『Channel』: Associated channel.

9) Track Config

『Track Config』: Can allocate different channels for each track.



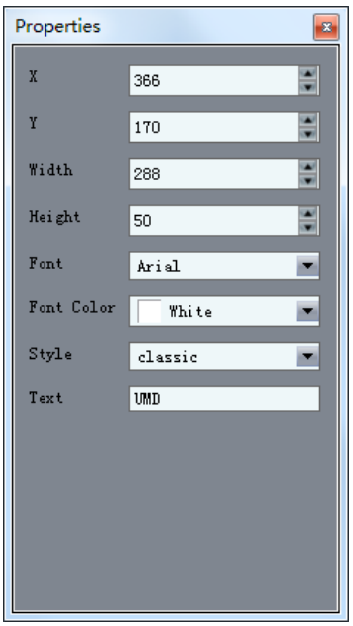
Can also choose audio meters which associated with same channel, then choose "Unify Channel" option, and check Auto assign track in right-click menu to complete channel setting.



6.2.3 UMD

Choose UMD object in layout design area, users can edit its properties in the

Properties window. UMD info can realize dynamically follow name of its signal source.



1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of UMD, the unit is pixel.

『Height』: The Height of UMD, the unit is pixel.

2) Font

『Font』: Arial and Courier New can be chosen.

3) Style

『Style』: Currently just have classic.

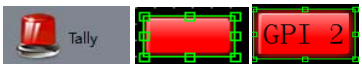
4) Text

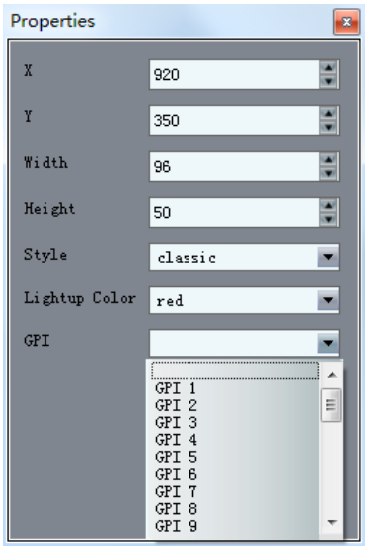
『Text』: Users can manually input UMD, as well as follow name of its signal source.

6.2.4 Tally Light

Tally light is crucial that located in such as cameras, video wall and some other system nodes, respectively give prompt to compere, photographer and producers, notice what signal is on air now. coordinate various position of staff by use of visual prompt so

that know in time the progress of program.





1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of tally light, the unit is pixel.

『Height』: The Height of tally light, the unit is pixel.

2) Style

『Style』: Currently just have classic.

3) Lightup color

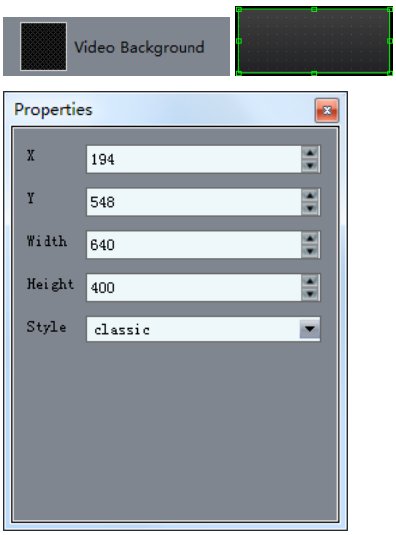
『Lightup color』: There are red, yellow and green.

4) GPI

『GPI』: Each tally light can be associated with one GPI signal, and choose one GPI from drop-down list. the corresponding tally light will be activated when server received an external GPI signal.

6.2.5 Video Background

Choose video background in layout design area, users can set relative parameters from corresponding Properties window.



1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of video background, the unit is pixel.

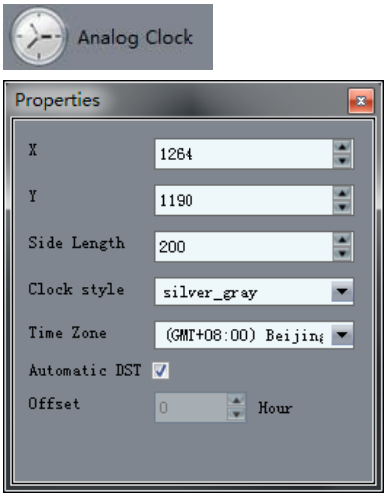
『Height』: The Height of video background, the unit is pixel.

2) Style

『Style』: Currently just have classic.

6.2.6 Analog Clock

Choose analog clock in layout design area, users can set relative parameters from corresponding Properties window.



1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Side Length』: The diameter of clock.

2) Clock style

『Clock style』: silver_gray and silver_white are alternative.

3) Time Zone

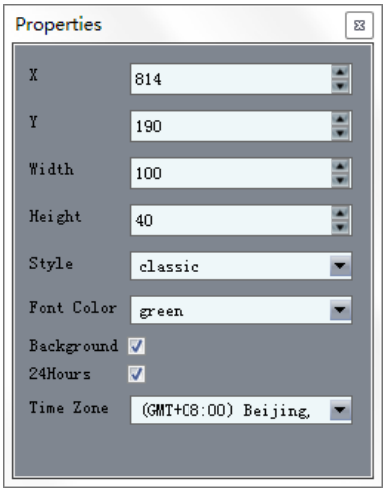
『Time Zone』: Can choose from drop-sown list according to real time zone.

『Automatic DST』: When Automatic DST is checked, "Offset" cannot be set, the system will automatically select DST according to selected time zone.

『Offset』: When Automatic DST is not checked, offset can be set to 0 or 1, 0 is non-DST, 1 is adjusting of DST.

6.2.7 Digital Clock

Choose digital clock in layout design area, users can set relative parameters from corresponding Properties window.



1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of digital clock, the unit is pixel.

『Height』: The Height of digital clock, the unit is pixel.

2) Style

『Style』: Currently just have classic.

3) Font Color

『Font Color』: Red and green could be chosen.

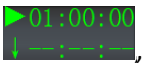
4) Background

『Background』: If checked, digital clock has grey background.

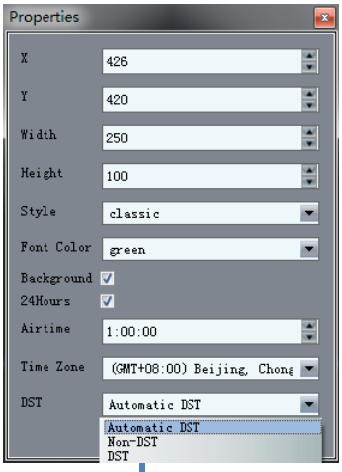
5) 24 Hours

『24 Hours』: If checked, time will be displayed in 24 hours format, otherwise, in 12 hours format (with am and pm)

6.2.8 Timer

Choose Timer in the layout design area, you can set relative parameters in the corresponding properties window. Set the Airtime such as 1:00:00, 

, after uploading to Fresco server, can see airtime and countdown time (the difference between system time and airtime).



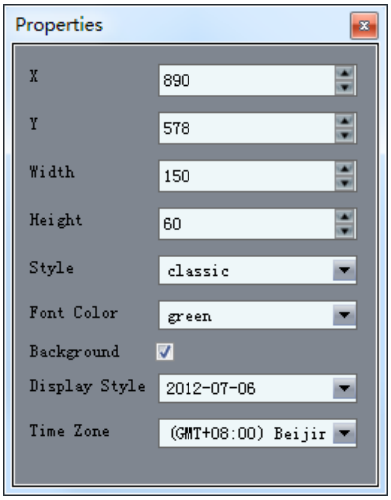
1) Airtime: can set airtime.

2) Font Color: red or green.

3)DST: When Automatic DST is checked, the system will automatically select DST according to selected time zone; select DST, all time zones will be converted to DST.

6.2.9 Date

Choose date object in layout design area, users can set relative parameters from corresponding Properties window.



1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of date object, the unit is pixel.

『Height』: The Height of date object, the unit is pixel.

2) Style

『Style』: Currently just have classic.

3) Font Color

『Font Color』: Red and green could be chosen.

4) Background

『Background』: If checked, date has grey background.

5) Display Style

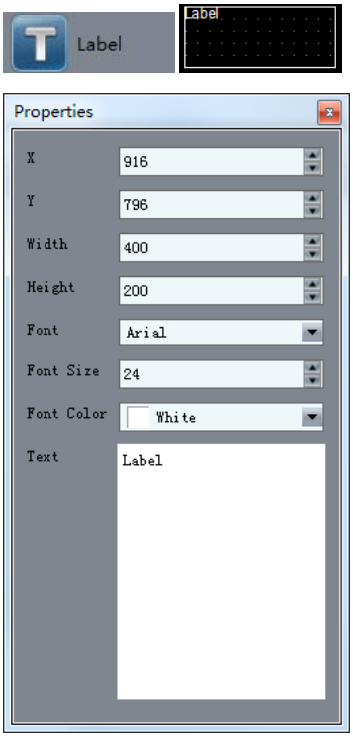
『Display Style』: Take 2012-06-19 for example, there are 6 styles: 2012-06-06, 06-06-2012, 06-06-2012, 2012-06-06 Wed, 06-06-2012 Wed and 06-06-2012 Wed.

6) Time Zone

『Time Zone』: Can choose from drop-sown list according to real time zone.

6.2.10 Text Frame

Choose text frame in layout design area, users can set relative parameters from corresponding Properties window.



1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of text frame, the unit is pixel.

『Height』: The Height of text frame, the unit is pixel.

2) Font

『Font』: There are Arial and Courier New.

『Font Size』: Choose based on practical use.

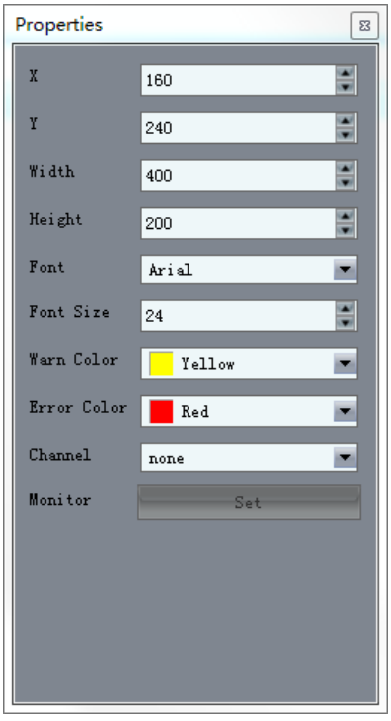
『Font Color』: Multiple colors can be chosen.

3) Text

『Text』: Input text you want to display on the screen.

6.2.11 Alarm Frame

Choose alarm frame in layout design area, users can set relative parameters from corresponding Properties window.



1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of alarm frame, the unit is pixel.

『Height』: The Height of alarm frame, the unit is pixel.

2) Font

『Font』: There are Arial and Courier New.

『Font Size』: Choose based on practical use.

3) Color

『Warn Color』: Yellow for default, multiple alternatives.

『Error Color』: Red for default, multiple alternatives.

4) Channel

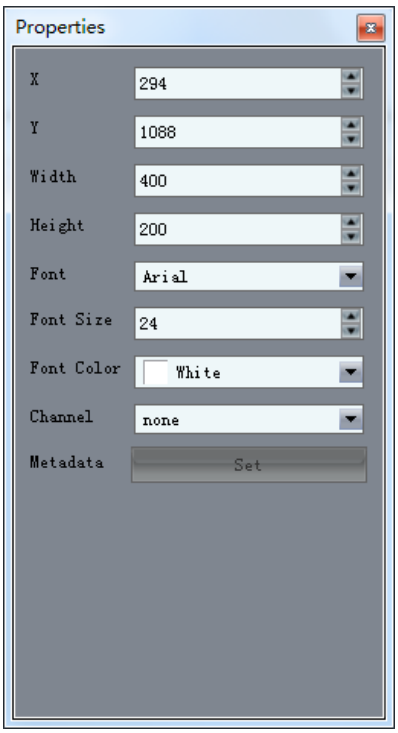
『Channel』: Associated channel

5) Monitor

『Monitor』: That is video and audio alarm setting.

6.2.12 Metadata Frame

For video, metadata inludes: port name, AFD&AR, video format and time code. For audio, metadata is port name. Users can know some important info via metadata.



1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of metadata frame, the unit is pixel.

『Height』: The Height of metadata frame, the unit is pixel.

2) Font

『Font』: There are Arial and Courier New.

『Font Size』: Choose based on practical use.

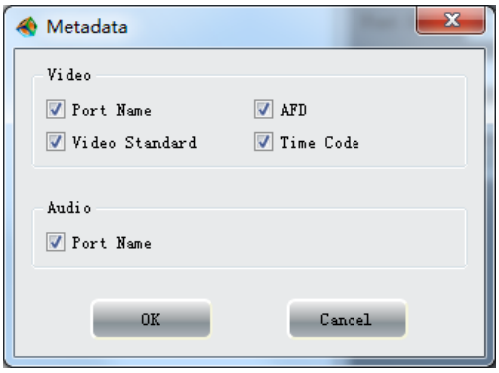
『Font Color』: Multiple colors can be chosen.

3) Channel

『Channel』: Associated channel

4) Metadata

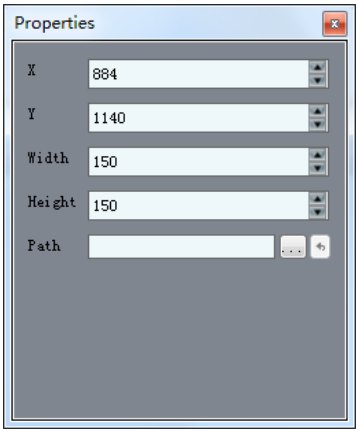
『Metadata』: Click Set button to pop-up 【Metadata】window. For video, metadata inludes: port name, AFD&AR, video format and time code. For audio, metadata is port name.



Check metadata you need to display them in layout.

6.2.13 Image

Choose Image in layout design area, users can set relative parameters from corresponding Properties window. Current supported formats include: .jpg, .png, .tif and .bmp.



1) Position parameters

『X』: Horizontal position coordinates relative to top left corner, the unit is pixel.

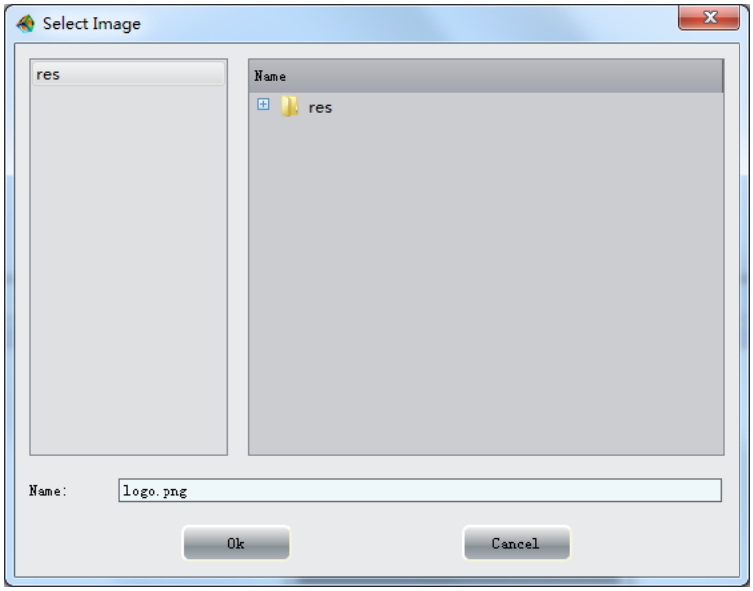
『Y』: Vertical position coordinates relative to top left corner, the unit is pixel.

『Width』: The width of image, the unit is pixel.

『Height』: The Height of image, the unit is pixel.

2) Path

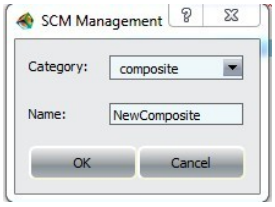
『Path』: When choose path here, for default enter res folder, and choose needed image here.



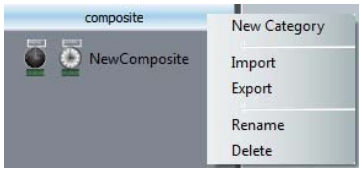
6.2.14 Composite Element

Choose multiple elements and right-click to show menu, choose 『Save as Composite』.

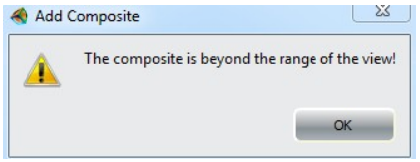
"SCM Management" window will be shown, users can name and classify new composite. like following picture to show, the name is "NewComposite", category is "composite".



Click OK, composite element will be shown under the toolbox. Right-click composite to pop-up the menu with New Category, Import, Export, Rename and Delete options.



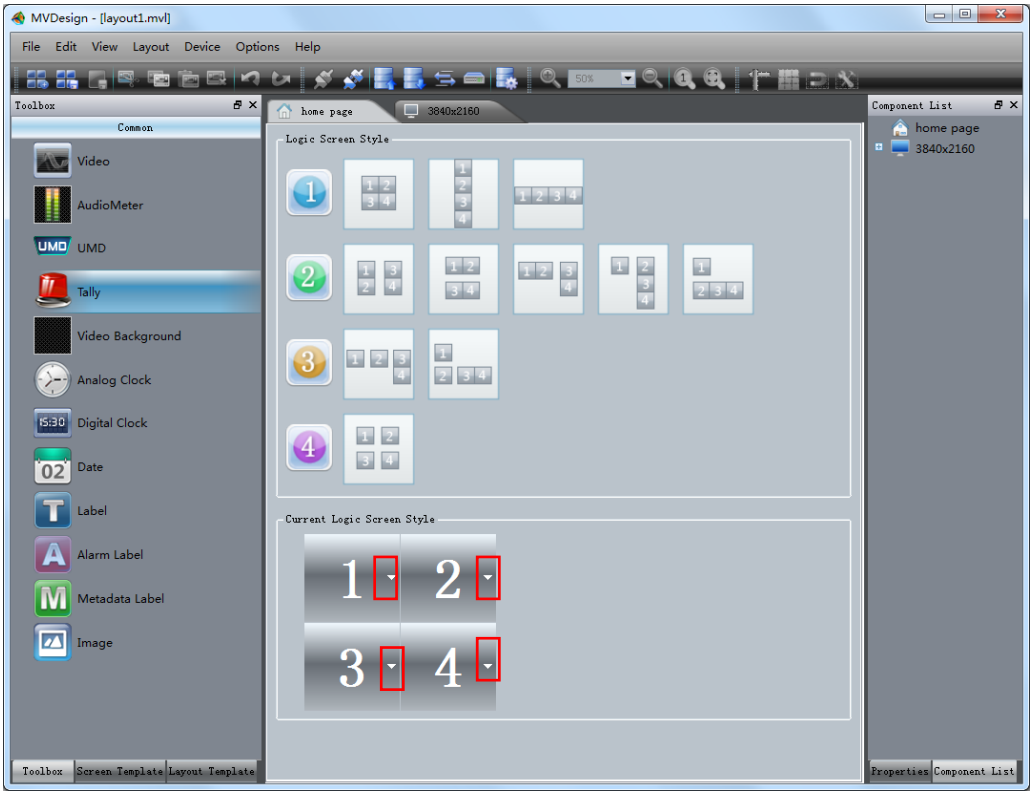
When the resolution of a composite (like 3840x2160) is higher than the resolution of layout design area, namely current logical screen (like 1920x1080), the Add Composite window will be displayed to show users "The composite is beyond the range of the view!"



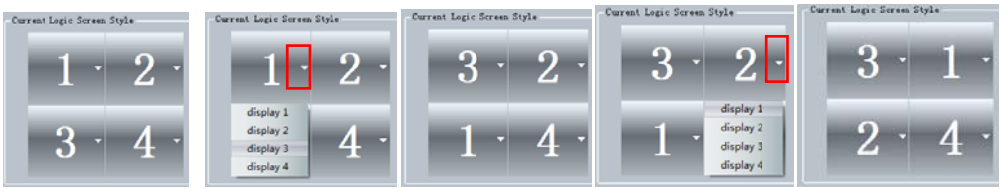
A composite with resolution less than or equal to 1920x1080 can be used in any resolution of layout design area. This function makes layout editing convenient and fast.

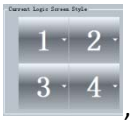
7 Layout Design Area

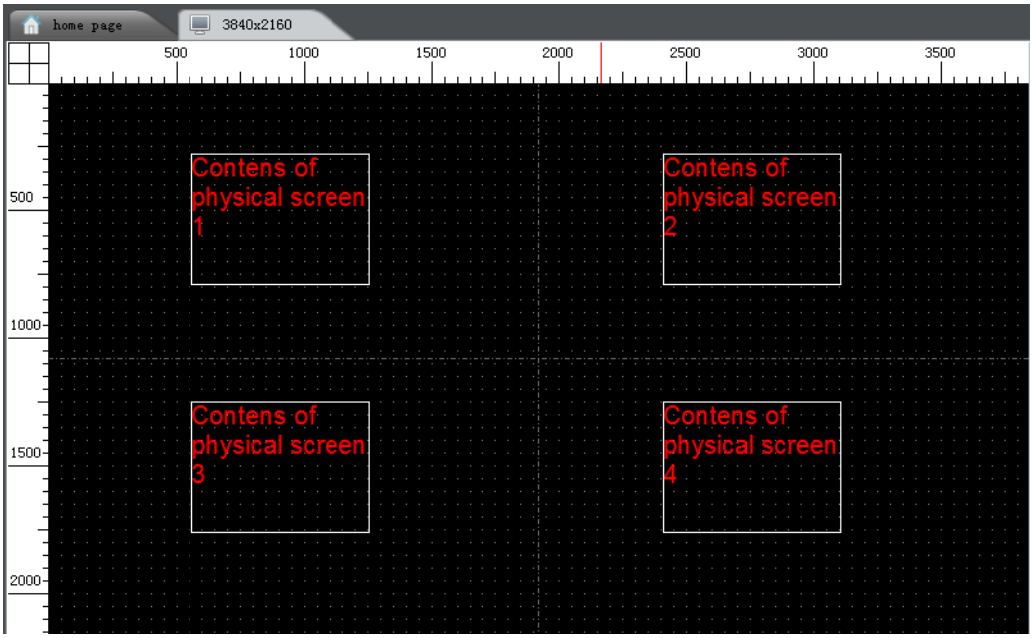
Layout design area of SCM management software include "home page" and "3840x2160 (current layout)" .



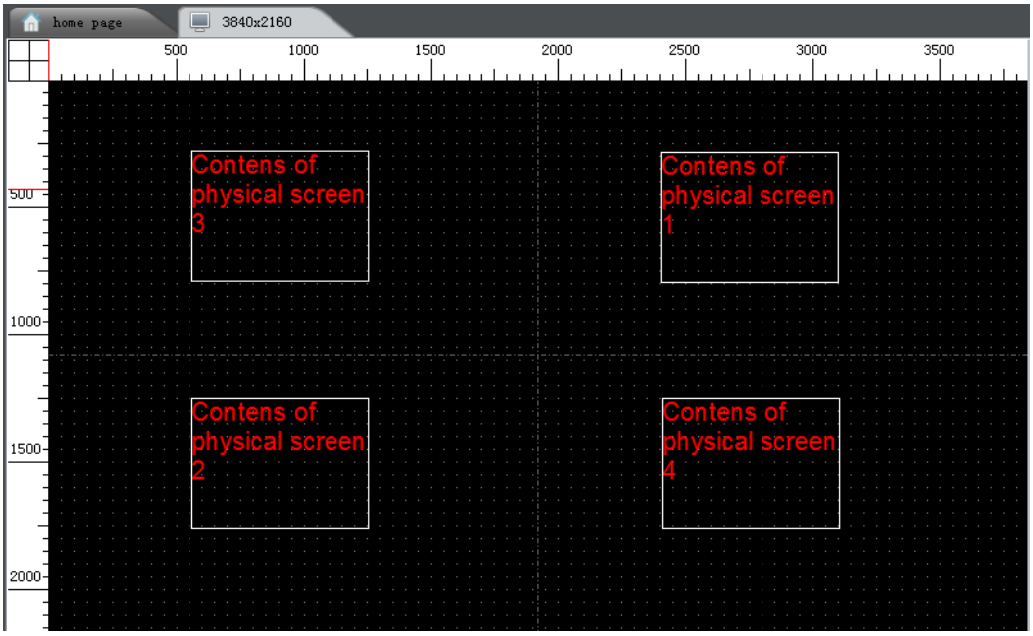
1. Home page includes logical screen style and current layout style,. choose a logical screen style, for example 3840x2160, this layout will be displayed in new added tab at right side of home page.
2. There is a drop-down list at right side of each screen in current layout, list screen1, screen2, screen3, screen4. Users are able to change screen order by selection from drop-down list. The process of changing as following:



3. If current logical screen style is  , then corresponding content displayed on the screens are:



4. If current logical screen style is , then corresponding content displayed on the screens are:



7.1 Layout Uploading and display

Drag-drop needed elements to layout design area, and adjust layout by use of tools

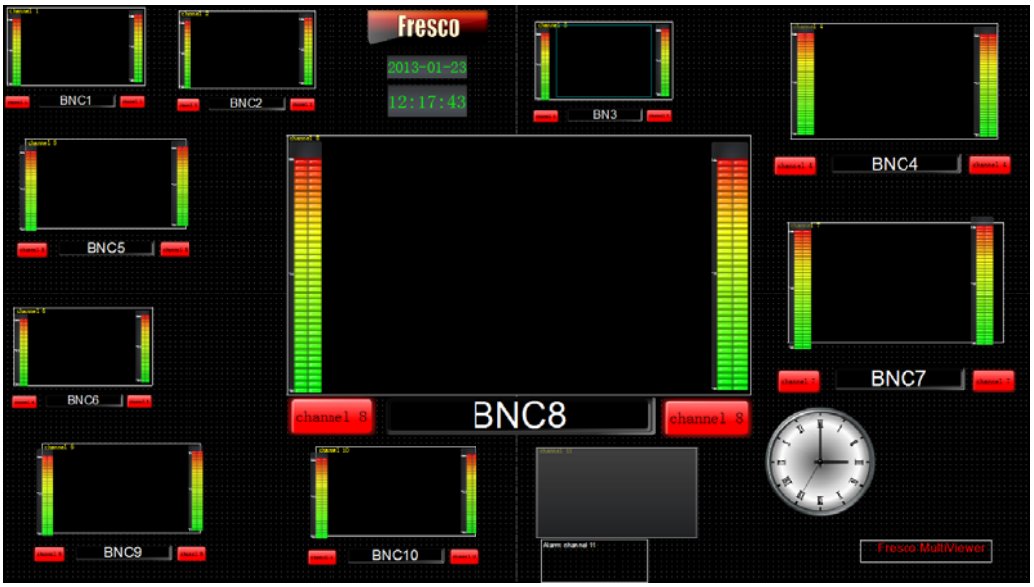
in menu bar and toolbar, in the meantime, can also set each element properties in properties window. After settings, save layout, and upload it to device terminal to see display effect.

When upload designed layout to device terminal and display it on the screens, the elements displayed on the screen may occur position offset relative to the position in original layout. In case of this phenomenon, we recommend that for video, set the value of X coordinates to integral multiple of 4, for alarm frame, metadata frame, set the value of X coordinates to integral multiple of 2, and turn on grid alignment option in the toolbar, and set grid increment to integral multiple of 4. In this way, the element we drag-drop into layout design area will automatically align points of grid to eliminate offset.

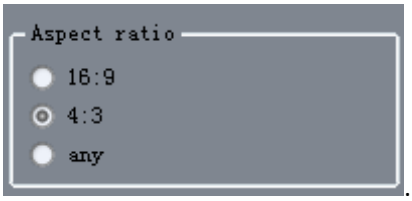
Due to this function is based on picture pixel, when the value of X is not integral multiple of 2 or 4, after layout is uploaded to server, the system will adjust automatically the positions of elements on the basis of correct pixels so that make the offset value to be integral multiple of 2 or 4.

7.2 Layout Design Note

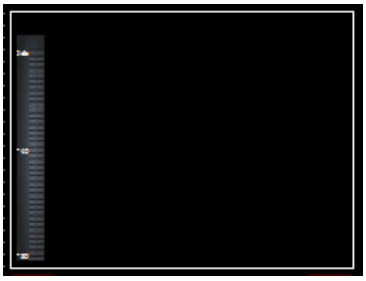
The method of design layout can be classified into online and offline design. after offline design, save layout and connect control terminal with Fresco server and then upload layout. The picture below will be an example to illustrate layout design.

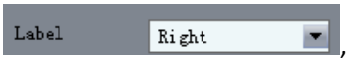


First, choose logical combination in home page.

Second, drag-drop video window and audio meter to proper position, modify AR of video window: 4:3 

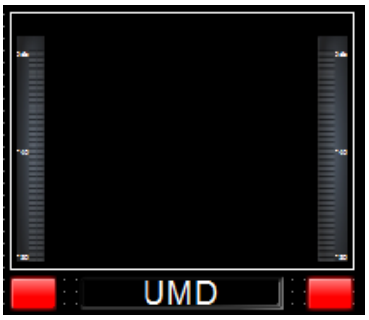
.



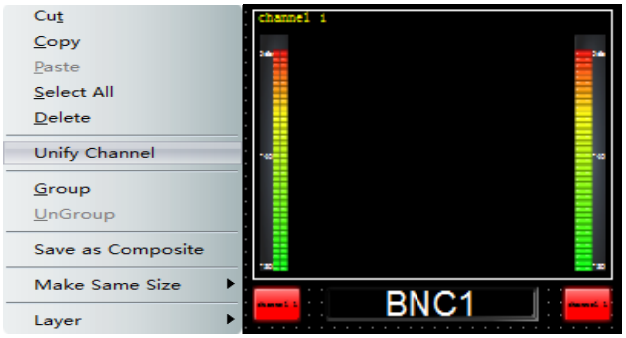
Third, put audio meter into right position, the number of audio column in one audio meter can be modified, generally we choose 1 column in one audio meter, then copy and paste this audio meter, put it on the other side of video window, modify its Properties-Label: Right 

, choose both two audio meters then press button to align bottom.

Step Four, drag-drop UMD and Tally to the bottom of video window or any position and use to arrange all elements in order.

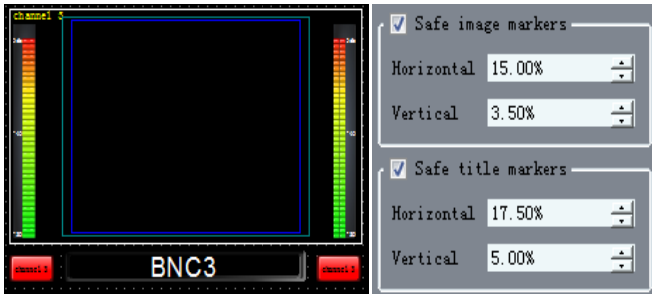


Step Five, choose all above elements , right-click and choose Group, then choose Unify channel.

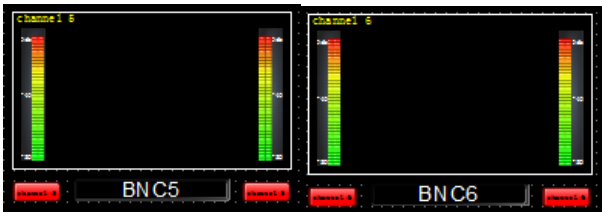


Step six, use above method to produce similar layout, like picture below:

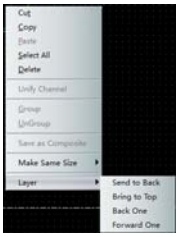
1) click on video window, modify its properties, add safe image maker and safe title maker.



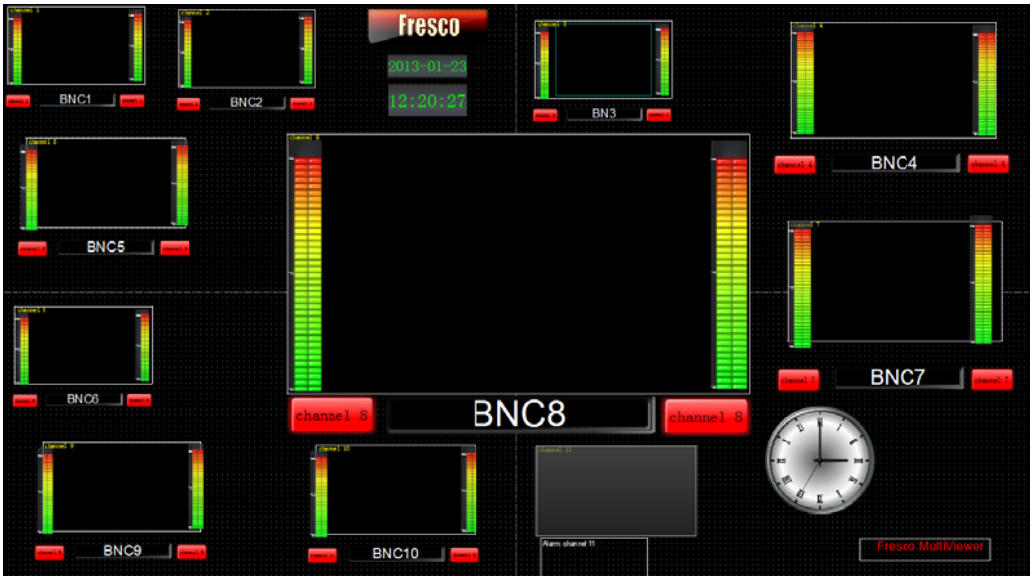
2) Modify AR: 16:9.



3) Add Metadata label alarm label and text frame below video window, and add

video background at behind or top of video window. 

Step Seven, use to make all elements in order.



the layout can be produced according to above method. if you have any special needs, please contact our technical staff to perform analysis.